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Issued Every Month

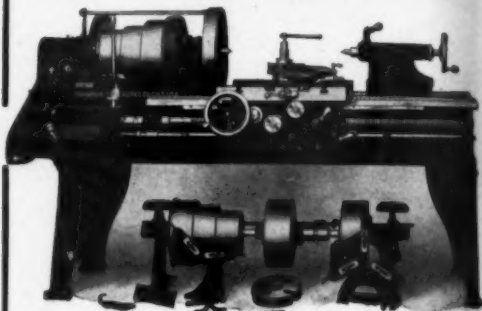
for Free Distribution to Users
of Machine Tools

HITCHCOCK'S
**MACHINE
TOOL LIST**

A Reference Book for Buyers
of Iron Working Machinery

Published by
A. H. HITCHCOCK
1220-1235 Carlton Building
Chicago

Double Back Geared Champion Lathes



16-inch Lathe.

Possess the decided advantage in point of convenience of changing from Back Gear to Double Back Gear or Fast to Slow Speed and vice versa without stopping the Lathe.

All manufacturers realize the value of time lost in making changes and adjustments in any tool.

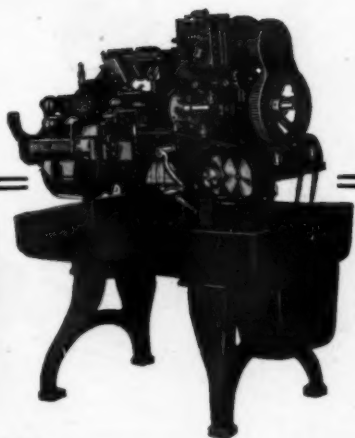
Are you using the latest and best? If not, you want to acquaint yourself with the distinctive features found in the **Champion Lathe**. The use of this really practical and modern tool means for you the highest grade of accurate work at the lowest cost.

Write for catalogue and prices

10-12-14-16 & 18-inch Swing

Champion Tool Works Co.

2426 Spring Grove Ave., Cincinnati, Ohio, U. S. A.



The
ACME AUTOMATIC

Multiple Spindle Screw Machine

stands for Quality, Quantity and Economy.

¶ It is built today on the experience and success gained thru years devoted to the improvement of the *one* machine.

*We've always operated hundreds
of Acmes in our own plant*

The National-Acme Mfg. Co.
Cleveland, Ohio

New York, 77 White St.

Boston, 141 Milk St.

Chicago, 549 Washington Blvd.

Detroit, 1222 Majestic Bldg. Atlanta, Candler Bldg.



Horizontal Drilling and Boring Machine with Accurately Planed Table

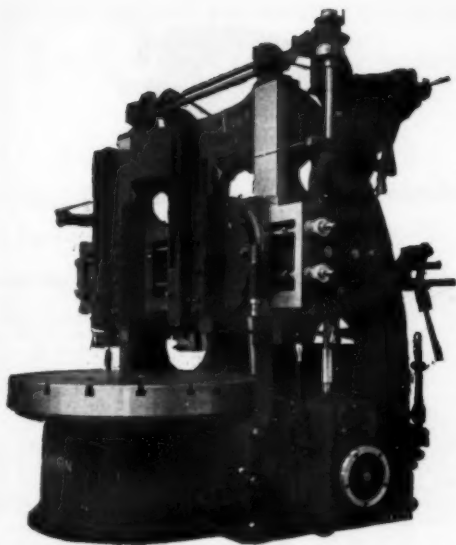
A most complete and convenient tool for drilling in the ends of long bars or columns, and heavy castings requiring holes in different places, that cannot be drilled with an upright or radial drill. The 33x40 in. table is provided with T slots so work may be bolted on; it can also be supplied with a rotary chuck or auxiliary table so the work will revolve, without removal from its setting, for drilling holes in any part of it. Adjustable to drill holes in any part of a space 46 in. wide and 40 in. high without changing work. The spindle has a horizontal automatic feed of 16 in., giving it a large range.

Made with or without table, back gear, power feed, automatic stop, reversing countershaft and boring bar support.

*Our specialty is Drilling and Boring Tools;
Let us help you with your individual problem*

HAEFER MFG. CO

116 Jackson Street,
FREEPORT, ILL.



It's Production You Want—Isn't It?

Well then, don't overlook the fact that more work and better work can be done on a

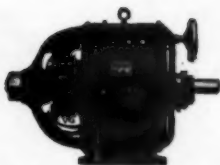
Colburn New Model Boring Mill

than any mill on the market. The reason in a nutshell is that every part responds so quickly to the will of the operator and is so easily handled that there is no lost time.

Then too, Colburn Mills have plenty of power and great rigidity. There are many interesting Colburn features you should know about.

Send for our handsome new catalog A-1

Colburn Machine Tool Company
Franklin, Pa.



Reliance Adjustable Speed Motors will make your Shapers do 20 to 100 per cent more work.

It's simply a question of cutting strokes per minute plus ample power at the cutting tool.

Do you realize that with only eight changes in cutting strokes, whether these are obtained by means of a speed box or cone pulleys, whether the source of power is a main line shaft or a constant speed motor, the average capacity of any shaper doing miscellaneous work under the best conditions *cannot be greater than 84% of its possible maximum*—and under average conditions is usually less than 50%? Extensive tests have proved this.

The Ideal Drive

The following conditions *must* be met to produce 100% productive efficiency from any shaper under all conditions:

1. A positive method of drive which delivers *full power at all speeds.*
2. A proper range of speeds.
3. An *unlimited* number of running speeds.

You get *all* these with the *Reliance Adjustable Speed Motor.*

It is the *only* motor which gives an *infinite number* of running speeds throughout wide ranges.—there is absolutely no jump or gap, the speed change being smooth, gradual and continuous.

This is all accomplished simply and quickly. *No complicated controller is required.*

Whatever make of shaper you buy select a Reliance Adjustable Speed Motor to drive it.

If you would be interested in learning more about this wonderful motor ask us to send Bulletin 10-L.

Our Bulletin 101, "The Crank Shaper," takes up the shaper drive question thoroughly.—it gives some interesting facts and figures, the results of careful tests. Shall we send it?

We also manufacture Reliance Constant Speed Motors for either alternating or direct current service.

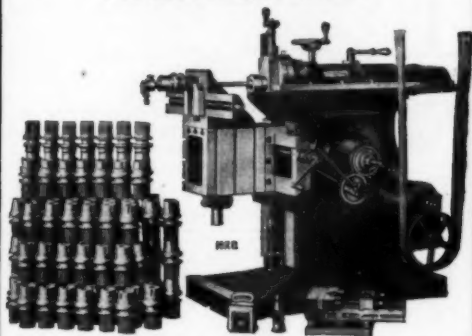
Reliance Electric & Engineering Co.
709 Caxton Bldg., Cleveland, Ohio

Keyseating Attachment

For use with

Cincinnati Shapers

For cutting Keyways up to 1-inch wide, in holes
9-16 inch and up in diameter



153 Semi Steel Gears, each 7 inches long, Keyseated
5-16 inches long by 5-32 deep, in 6 hours and 22
minutes, an average of $2\frac{1}{2}$ minutes for each gear.

This attachment, used on a "Cincinnati" Shaper, keyseats
gears or pulleys with absolute accuracy and at bed-rock cost.

A cutter bar, working on the pull-cut principle, is secured
to the head of the shaper so as to bring the cutter, carried by
the bar, always in proper line with the keyseat to be cut.

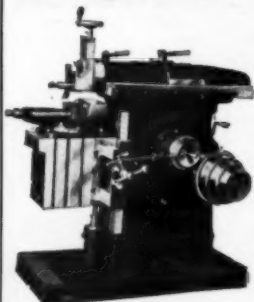
Can furnish bushings so that taper keyways may be cut,
if desired.

Write for full description. Glad to send it.

THE CINCINNATI SHAPER CO.

Colerain Ave. & Elam St., Cincinnati, Ohio.

Step toe Shapers

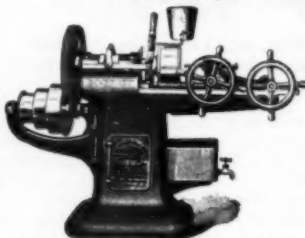


are thoroughly tested and every shaper we build is compelled to run under belt a week before it leaves our shop. We therefore know that it is in perfect working order and will give satisfaction.

It will pay you to get our catalogue describing Step-toe advantages.

The John Steptoe Shaper Co.
Cumminsville, Cincinnati, Ohio

The Merits of the Merriman Standard Bolt Cutter Are Chiefly in the Head



And they are:—

Simplicity — only four parts.

Durability — needs but few repairs.

Solidity of Dies — which is absolute.

Square Bearing of Dies in the Ring.

Uniformity — every bolt the same size.

Economy — the lowest labor cost.

Rapidity — several times that of ordinary machines.

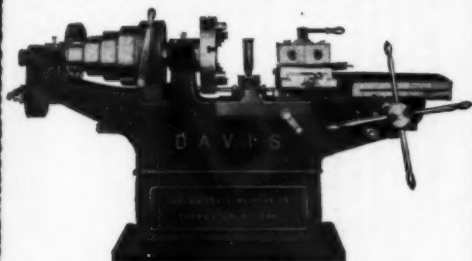
They are in use all over the world, their superiority having been proved by actual test in every civilized country. Changed in a minute to tap nuts; easily adjustable to any size; cut V, square or ratchet threads with equal facility. Made for bolts from $\frac{1}{4}$ to 4 inches.

Our Catalog also shows Bolt Threaders, Bolt Pointers and Nut Tappers

Write for a copy

H. & B. BROWN CO., - East Hampton, Conn.

Accurate Machine Tools



24-inch Turret Boring and Forming Lathe

At the present time when pieces of machine work are being produced in duplicates, and when lots of thousands are being carried through at one time, it is very desirable to have a machine to produce such parts in the quickest possible time.

Our Turret Boring and Forming Lathe, which we have recently brought out, seems to be a very popular machine for this class of work, and we think all manufacturers could look into the merits of this machine to our mutual advantage.

By special tools used on the Turret, six different operations can be performed on the piece held by the chuck, at one chucking: A piece can be bored; faced; turned on the outside; forming done on the side; counterbored, and reamed at one setting.

We shall be glad to take this matter up with any one interested in the machine, and give full particulars as to the various kinds of work that can be turned out on this machine.

For particulars address

THE W. P. DAVIS MACHINE CO.

Rochester, New York, U. S. A.



36-in., Triple Geared

The accuracy, rigidity and capacity of New Haven Lathes are due to our giving the same care to every detail, while considering that relation of each part to the whole that will produce the best balanced tool.

Lathe manufacturers are inclined to exploit special features of their tools—headstocks, feed works, etc.—while paying too little attention to other features that are of prime importance in practical operation.

We make a special feature of *every part* of New Haven Lathes. Our special circular, "The Power of the Lathe," describes how our headstock is made second to none, designed to meet all conditions, with abundant power for fast or slow speeds.

But we make equally special features of such parts, for instance, as the tailstock, which cannot possibly slip while taking a heavy cut or while adjusting the set-over for tapers with heavy work hanging on the centers.

New Haven Lathes are good clear through. Let us describe the size you need—anything from 18 to 65 in. swing and 8 to 36 ft. bed.

New Haven Manufacturing Co., New Haven, Conn.

Turrets for Engine Lathes

Give you the facilities and the economy
of a turret Machine at Small Cost.



Carefully designed for attachment to lathes of any make, they increase so greatly the capacity and earning power of ordinary engine lathes as to make them nearly equal to special machines of high cost. We make several styles for different work and conditions, all having our patented revolving and locking mechanism, which permits the operation of the turret with one hand. Style A, illustrated, made with 4 or 6 holes, is intended for boring and forming tools with round shanks.

Ask for a Lathe Turret Book

FAY & SCOTT, Manufacturers, Dexter, Maine

Extension Gap, Standard Engine and Patternmakers'
Lathes, Planer and Shaper Centers



Cincinnati Lathes

Always reliable because of their quality of material and the care in manufacturing every part of them. Supply either **Quick Change** or another **Feed Box** giving an unlimited range, **5 step** cone or wide **3 step** cone with double back gears, and whatever attachments are desired. Our literature fully describes this machine. Write for it.

The Cincinnati Lathe & Tool Company

2730-32 Spring Grove Avenue, : : : Cincinnati, Ohio



Still Better Gears

Note that the larger gear is 6-inch wide, but is cut across only $5\frac{1}{2}$ -inch of face to show how gears are cut on the

Farwell Gear Hobber

It is one thing to generate a correctly formed tooth and another to generate a correct gear **all the way round.**

When gears are cut one or two teeth at a time, and the blank revolved slowly as on all other gear cutters, the last teeth are cut deeper than the first, due to the gradual heating of the blank.

The Farwell Automatic Gear Hobbing Machine revolves the blank rapidly **while cutting**; this distributes the heat uniformly and generates **true gears with correct teeth.**

Get our circular No. 802-H and send us sample blanks for prices.

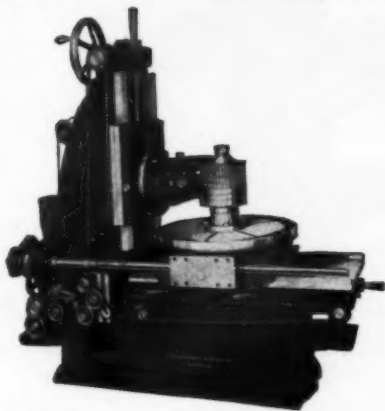
The Adams Company

810 Second Street,

Dubuque, Iowa, U. S. A.

The Backbone

Of Our Original S. & S. Automatic Gear Hobbing Machine
**Is The Forty Years' Experience Of
The Maker In This Special Line—**



The *patented* features of our machine make it the one perfect, accurate and practical tool for generating

Spur, Worm and Spiral Gears

at a saving of 50 per cent and over. Doing away with errors in dividing, marring of tooth flanks, rattle and noise of running gears, tiresome figuring of lead gears.

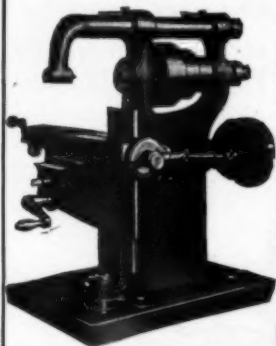
Over a thousand well satisfied users.

Ask for catalog and references

Schuchardt & Schutte

West Street Building, New York

Burke's Bench Miller



No. 4 Milling Machine

A Seasoned Tool

The tool to buy if you want extreme accuracy and permanent alignment five years hence as well as now. In making this miller the greatest care is taken thoroughly to season all castings both before and after machining. We carry these frames and parts from six to eight months after work begins on them before the final finishing is done. The result is a tool that is accurate and will stay accurate as long as you use it. For precision work it has no equal.

Longitudinal feed, 8½ in.;
traverse feed, 4 in.; vertical
motion of knee, 8½ in.;
table surface, 3½x16 inch.

BURKE MACHINE CO.
Conneaut, Ohio

An Oil Well Of Your Own

Couldn't Produce Oil Any Cheaper Than The Curtis Extractor

gets it out of chips and turnings. This machine is built for long service, is extremely simple and economical to operate, and the purchase price is low. The steel pan is made exceptionally strong and is seamless. Our friend, the Oil Man, is not in love with this machine, for your gain is his loss. Why not let us send you one, and begin saving that good oil?



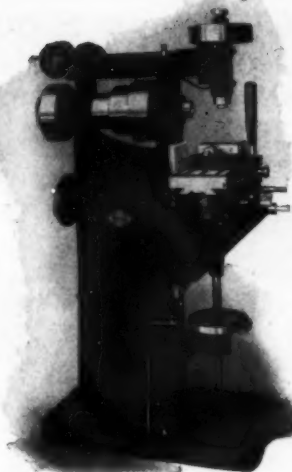
Pan
Holds
24
Quarts

Made in
Two Sizes

Suppose you write us today; there's no time like the present

Curtis Oil Extractor Company

95 Foster St., Worcester, Mass.



No. 3-A Chicago (Duplex) Hand Miller

Note the Screw Vertical Adjustment to the Knee.

By this arrangement the knee may be adjusted up or down 0.001 inch or even less if necessary.

Full information sent on request.

Chicago Machine Tool Co., Chicago, Ill.

Demonstrations at

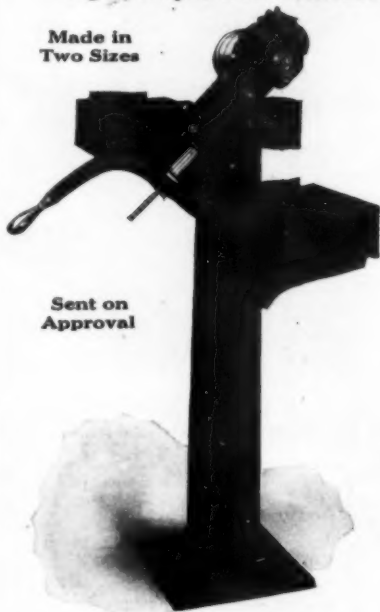
HILL, CLARKE & CO., INC.

Boston New York Cleveland Philadelphia Chicago

Rapid Screw Slotting

**Only One Handling of Screws
Light, Rapid and Convenient**

**Made in
Two Sizes**



**Sent on
Approval**

Garvin No. 1 Rapid Screw Slotter—Capacity $\frac{1}{4}$ to $\frac{1}{2}$ in. Screws

Send for circular No. 140

IMMEDIATE DELIVERY

Manufactured By

THE GARVIN MACHINE COMPANY
Spring and Varick Sts., New York City

Scientific Grinding

Means Accurate and Economical Drilling
and a Saving in Drills

The American Drill Grinder



is built on scientifically correct principles, and consequently turns out correct work. It holds each drill, large or small, in its proper position while being ground, and the result is a perfectly centered point and proper clearance. This means absolutely accurate drilling and more of it, with a generous saving in time and drills.

The lip rest is entirely automatic in its operation, and the adjustable bearings, the safety wheel chuck and the safety stop for the drill holder are all special features of the American.

Our book on Drill Grinding contains information worth money

It's yours for the asking

THE HEALD MACHINE COMPANY

25 New Bond St., - - Worcester, Mass.

AIR COOLED DRILLS ARE BEST BY TEST



SEVEN SIZES

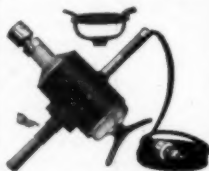
TO BORE IN STEEL

3-16, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{2}$, $\frac{3}{4}$, 1 and $1\frac{1}{4}$ inch. They are made for either alternating or direct current, and are dependable tools that we guarantee will give you satisfaction.

**We make Center and Surface Grinders
From One-Quarter to Two Horse Power**

They are time and money savers that you ought to investigate. Glad to send them on trial for a test in your own work.

**THE UNITED STATES ELECTRICAL TOOL CO
CINCINNATI, OHIO**



The Peerless

Air Cooled, Portable

**Electrical Drills
and Grinders**



Drills made in eleven sizes

3-16, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{2}$, $1\frac{3}{4}$, 2 and $2\frac{1}{2}$ in.

Tool Post, Surface, Bench and Aerial Grinders, Motors from $\frac{1}{4}$ to 3 h. p. All machines wound for alternating current as well as direct current. Machines sent on trial.

Write Dept. R. for Catalogue

**The Cincinnati Electrical Tool Co.
650 Evans St., Cincinnati, Ohio**

"Hard Service"

Electric Drills and Reamers



Made in six sizes for 110 volt or
220 volt direct current.

Drilling capacity 1-4 to 2 in.

Reaming capacity 3-4 to 1 in.

Write for bulletin No. 18

Electric Department
The Van Dorn & Dutton Co.
Cleveland, Ohio

Speed and Production

U.S.

A Padded Payroll!!

Do You Drill Holes? How Many?

How much does the labor cost
in a year's time?

How many hands on that kind
of work?

Do you pay less than \$4.00 a
week to run a drill?

We are doing one job
in 4 hours on the **AVEY**
Ball Bearing Drill Press
that formerly required 17
hours on a standard "up-
to-date" upright drill.

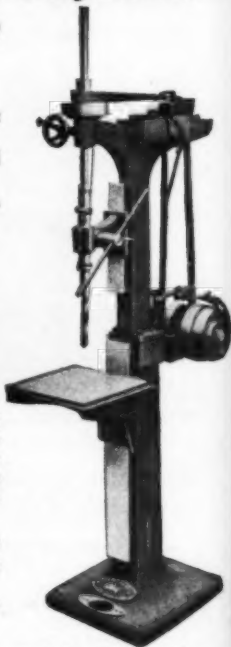
Even at the minimum rate of
\$4 a week, \$208 a year, the
same work would cost \$49 only
on the Avey, saving \$159 on
one drill. Higher rates show still
greater savings.

If we save you even one-half
your labor on all sizes straight
through,

Does the old drill press pay?

Where do the dollars look best to you?
In your profits—or in your payroll?

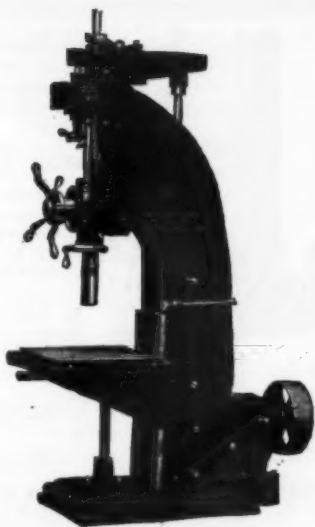
The Cincinnati Pulley Machinery Co.
Cincinnati, Ohio



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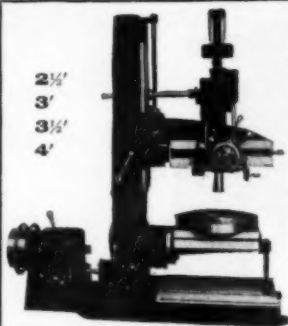
Th



For Drilling With High Speed Steel

This new 24-inch swing High Duty Drill, with a capacity for drills from $\frac{1}{2}$ in. to $1\frac{1}{4}$ in., drives high speed steel drills to their limit in solid steel. Its strong, rigid construction is clearly shown in cut. Spur gears are used entirely, except 1 pair of 2 to 1 bevel gears, and everything is driven in a straight line, with the result that practically *all* the power is transmitted directly to the drill point. This machine is reasonable in cost and it easily excels all other types in efficiency. Details?

The Foote-Burt Company,
Cleveland, Ohio.



The one-lever control of all spindle movements is one of the mighty good features of

Gang Radials

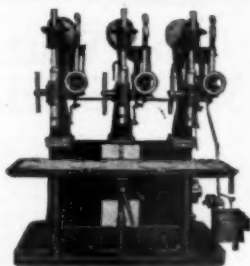
that indicates how we have worked out every detail to make the best tool of its kind that money can buy.

And by the way, if you haven't seen our friction type head, style "G.", ask for circular.

We invite investigation and the most rigid comparison

The Wm. E. Gang Company
Cincinnati, Ohio

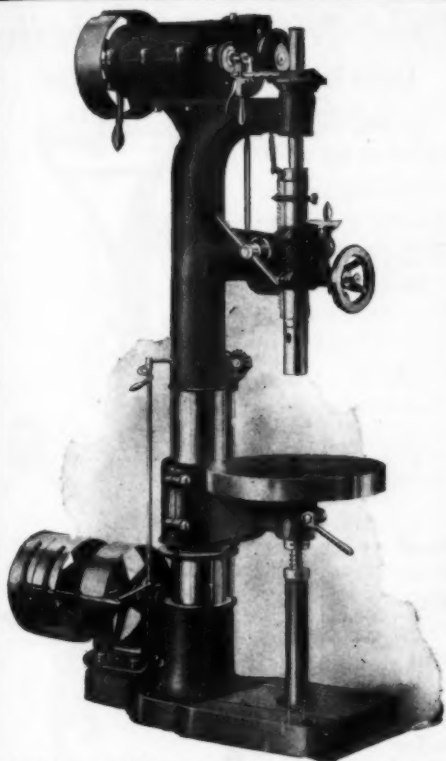
Rockford Gang's



They not only drill, but they bore ream, tap and face without removing work from jig.

Write for descriptive matter

Rockford Drilling Machine Company
Rockford, Ill., U. S. A.



Sibley All-Geared Hi-Speed Drill

Send for complete catalog of power drills

Sibley Machine Tool Company

10 East Tutt St.,

South Bend, Ind.

Our Modern 20-Inch Drill is the Most Practical

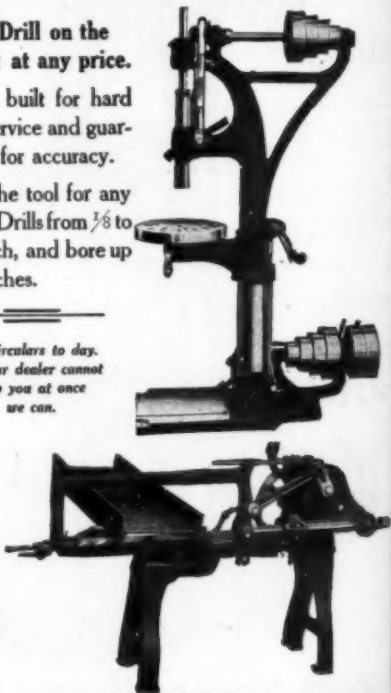
20" Drill on the
market at any price.

It is built for hard
rapid service and guar-
anteed for accuracy.

It's the tool for any
shop. Drills from $\frac{1}{8}$ to
 $1\frac{1}{4}$ -inch, and bore up
to 5-inches.

*Get circulars to day.
If your dealer cannot
ship you at once
we can.*

Royal
Power
Saws
Five
Sizes
From
4 to 15
Inches



Manufactured Only By
FRONTIER IRON WORKS

Letchworth and Grant Sts., Buffalo, N. Y.

The No. 1 Knight Will Do Your

Drilling and Milling at any Angle With One Setting of the Work



The table is graduated, and may be accurately tilted to any angle desired by loosening a hand nut. It enables you to drill and mill work without resetting, and easily saves from 30 to 50 per cent of the cost of performing the same operation on separate machines. Its precision and convenience make it practically indispensable for tool room and experimental work. In its design and construction it appeals to the man who is looking for a machine that will do things.

Our folder with illustrations showing the machine in actual operation on sixteen different pieces of work, is interesting; shall we send it?

W. B. Knight Machinery Co.
St. Louis, Mo.

For heavy work, look into our No. 2

Keyways Milled



on the Drill Press

Simple as drilling a hole.
Accurate duplicate work
in less time than you can
start it by other methods.

**Oil grooves milled en-
tirely within the journal,**
preventing oil from es-
caping from either end.

National Keyseat and
Oil Groove Millers for all
jobs of internal Oil
Grooving and Keyseat-
ing.

Write for new catalogue

National Machine Tool Co.

128 Longworth St., Cincinnati, Ohio.

Edgemont Friction Clutch Pulleys



Are the Best by Test

They are made to stand the
use and abuse clutches are
subject to in these times.

Our counter-shaft clutches
are adopted by the leading
machine tool builders as a
part of their machinery, be-
cause we have proved by use
and test that it is the strong-
est and simplest clutch made.

We also make special
clutches for all purposes.
Tell us your wants, and we

will make a clutch to suit your conditions.

Friction Clutches with Extended Sleeves for any Stand-
ard Steel or Wood Pulleys.

Our catalog for your card

The Edgemont Machine Co., Ft. of Mound Street,
DAYTON, O.

COMBINATION DRILL, CUTTER AND REAMER GRINDER



STYLE BX. Weight 385 lbs.

For simplicity and accuracy this machine is not equalled. No preliminary adjusting for grinding drills; range of work on Cutter Grinder equal to the much more expensive machines on market which do not grind drills, drills and cutters can be ground at same time by two operators without one interfering with the other, and the price is right.

Send for catalog fully illustrating

WILMARTH & MORMAN CO.
575 Canal St., Grand Rapids, Mich.



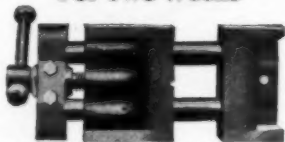
The United States Turning Tool

is a "winner" for all around work. The head is low, cutters are of self-hardening steel and designed for rapid and economical work. It has a solid support on the Sides of the cutter—insures heavier cut than any other holder of the same size. Saves its cost several times in a single month.

Send today for catalogue.

The Fairbanks Company
Springfield, Ohio

TRY The TS Drill Press Vise For Two Weeks



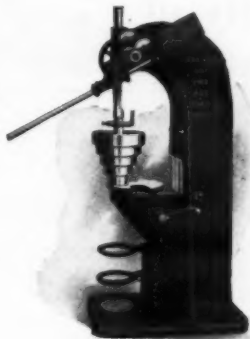
You'll know then what a handy thing it is for holding all sorts of irregular shaped pieces, and how it saves time and patience, to say nothing of drills, which cost money, too. It is perfectly simple, with no loose, detachable parts to get lost, and as strong as honest material will make it. The guide rods are hardened steel; edges and base are planed exactly square; V groove both ways for holding round pieces.

You don't need to wait; we can ship from stock

Wm. S. Nicholls Company
Hoosick Falls, N. Y.

is w
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Be
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"An Excellent Tool Giving Greater Satisfaction Than We Anticipated"

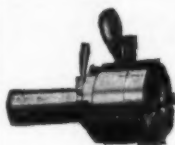


is what one of the largest shops in the U. S. has to say of the Greenard Arbor Press, and that is the tone of all the letters I receive from my many satisfied customers.

Besides pressing and driving arbors and mandrels, you will find it *the* tool for forcing on pins and bushings—more convenient than a hydraulic press; and the "Greenard" will prove itself to be Johnny-on-the-Spot for a hundred other jobs in your shop.

*Why not try one for 30 days?
Glad to take it up with you.*

Edwin E. Bartlett
336A Street, Boston, Mass.



**Strength—
Accuracy—**

**Simplicity of
Construction**



are combined in our tools. They are all made direct from bar steel and forgings, the best grade of open hearth screw stock being used, together with finest quality of crucible steel.

Our Adjustable, Self-Opening Screw-Cutting Die Heads and Collapsing Taps are in general use in Screw Machine work by manufacturers who are operating either hand or automatic Screw Machines.

It may be that **you** have failed to take advantage of our tools, while we have the very one that you need ready for you.

Write us about the work you have to do, and we will send you a drawing of the correct tool for the work, with description and price.

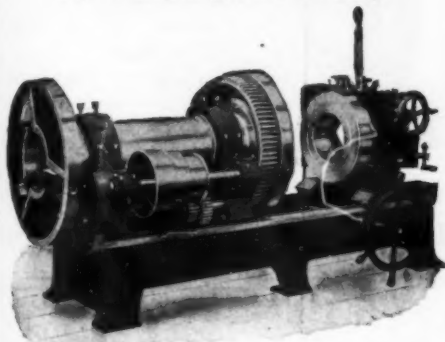
The Geometric Tool Company
New Haven, Conn., U. S. A.

Big

Modern Methods Demand

Power Pipe Machines

For Threading and Cutting



Among other things, you require Accuracy—Speed—Efficiency—coupled with simplicity of operation. Our seventeen styles and sizes meet every possible requirement of your shop, with the above qualities in ample proportion. Any degree of accuracy may be obtained, as they are adjustable to the 1-1000 part of an inch, and the machines are so simple that the average shop man operates them easily.

*Let us tell you what some of our
satisfied customers say*

Bignall & Keeler Mfg. Co.
Edwardsville, Ill.



Rockford

High Duty

Power Presses

Are built to meet the requirements of Modern Shop Practice and they do it.

The shaft and bearings are extra large and a proper distribution of metal gives plenty of strength for the hardest work.

Ask us to show you

Rockford Iron Works
Rockford, Illinois

SILENCE!



Reigns supreme where

Grant Noiseless Rotary Riveters

are in use.

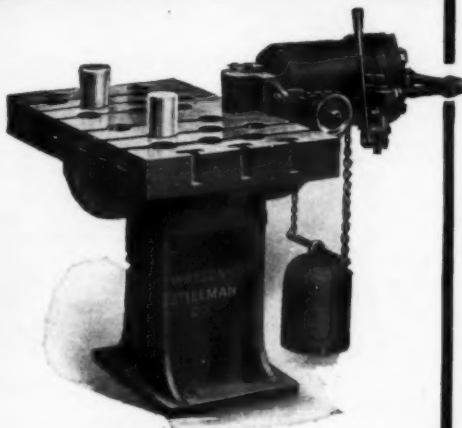
The machine illustrated herewith is specially adapted for heading both ends of a wire or rod at one time, as in riveting hinges, sash pulleys, pliers and numerous other articles where it is necessary to have an absolutely uniform head on each end.

Send us a sample of your work so we may demonstrate to you what can be done on these Machines.

Our catalogue shows our entire line of Riveters.

No. 83 Machine.

The Grant Mfg. & Machine Co., Bridgeport, Conn.



Hydraulic Bending Machines

Hydraulic power is by far the most economical and effective for bending large pipe, structural sections, automobile parts, metal bars and the like.

Watson-Stillman hydraulic bending machines are made in many types, one of which is shown above.

Tell us your requirements and if our standard machines will not do your work we are ready to build others that will.

Our line includes hydraulic pumps, presses, accumulators, intensifiers, punches, shears and jacks. State which interest you, so we can send catalogs.

The Watson-Stillman Company

Church & Fulton Sts., New York.

REVERSE PLATE
FOR RIGHT AND
LEFT THREADS

PLUNGER LOCKING
NO WRENCH RECD.

BACK GEAR
HANDLE

APRON MECHANISM
ALL GEARS AND
DOUBLE SUPPORT

CROSS FEED

ALL GEARS
COVERED

CHANGE GEAR
IN HEAD FOR
SPEEDS
3 CHANGES

APRON FRITION

COMPOUND REST
GRADUATES, BOTH SIDES

SHIFTING HANDLE
IN GEAR BOX, 11 CHANGES.
ELEVATES TO ENGAGE

OIL POCKET

REVERSE FEED IN APRON
FEEDS EITHER DIRECTION

WITH DEVICE
FOR FEED AND L
PREVENTING

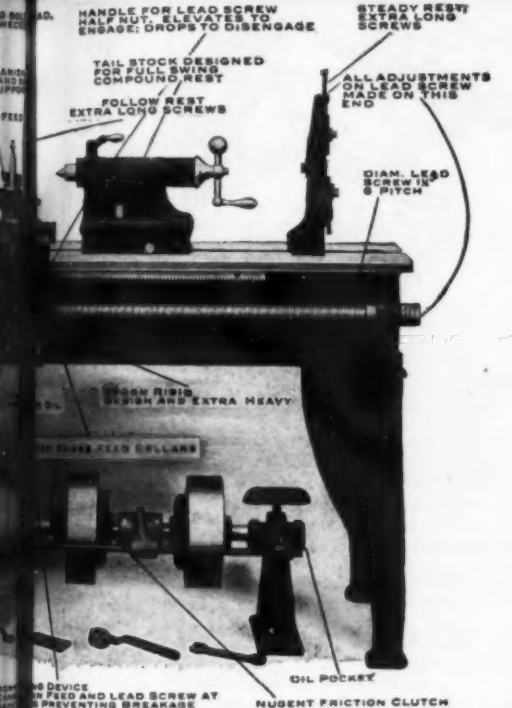
CISCO 14 INCH ENG

Swings 15 3-8"

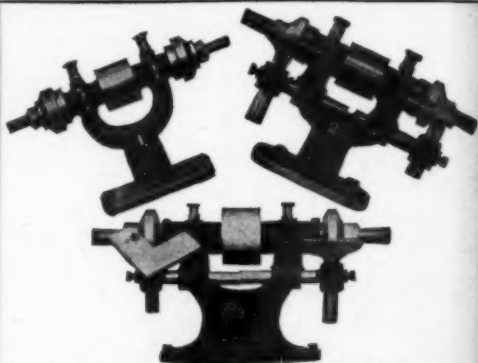
Weight 1,500 lb

MACHINERY and EQUIPMENT

The Cincinnati Iron & Steel Company



ENGINE LATHE
 Weight 1,500 lbs. Price \$265.00
MENT DEPARTMENT
 Cincinnati, Ohio



Partridge Emery Grinders

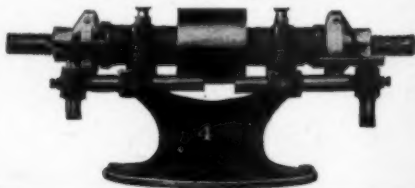
Here are four well-made Bench Grinders, adapted to light, medium and heavy work. Also furnished mounted on column. In addition, I make a high-grade heavy Floor Grinder of the cabinet type, thus being able to meet all demands for this class of tools. They are all well built, of the right materials, and have features of excellence that will interest you.

Tell me your needs in this line, and I will gladly mail full description and quote interesting price

E. O. PARTRIDGE

2047-9 Lake Street, - - CHICAGO

Also Foot Presses and Tapping Machines



Special Wood Working Tools

For Pattern Shops

Machines selected for their precision, and adjustability. Built like machine tools, and designed primarily for pattern shop service.

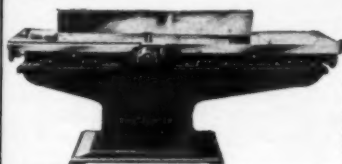
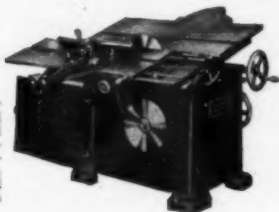
"West Side" Band Saw

Steel wheels, which can neither break, warp, twist or spring; under cut hubs; self-oiling bearings; brass-bushed loose pulley; tilting table; all adjustments made by operator without leaving his position. A band saw widely known for its superiority of design and construction.



Universal Double Saw Arbor

The best word in saw tables for accuracy and convenience. Gauges and adjustments for every possible requirement. A notable improvement upon a type of saw table conceded to be indispensable in every pattern shop.



Porter 20-Inch Jointer

The highest grade jointer or hand planer in market. Patented guard and safety cylinder; specially grooved tables.

We outfit pattern shops complete, guaranteeing the accuracy and efficiency of every tool. Whether you want a full equipment or a single machine, you will find our service helpful.

We shall be pleased to have you consult us

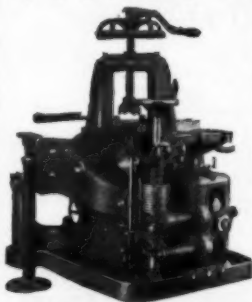
Chicago Machinery Exchange

Manufacturers' Exclusive Representatives

159-161 North Canal Street, Chicago

Can furnish used machines, if desired, carefully rebuilt in our own shops and fully guaranteed.

VITAL POINTS



is the title of our new folder on cold-metal sawing, just off the press. You can have a free copy if you'll drop us a line at once.

Do it today

Lea Equipment Co.
90 West St., New York City

A 12 Inch Saw, \$100.

Immediate Delivery

Screw Feed and Ball Bearing Thrust

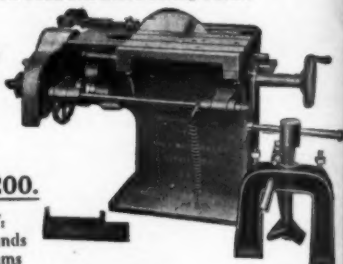
Cuts 3x5 or
1-2x9 inch.
Power Friction
Feed.

Automatic
Knockout.

Large Clamp-
ing Table.

20 in., \$200.

CAPACITY:
5 $\frac{3}{8}$ Inch Rounds
12 Inch I Beams



Write for particulars

Burke Machine Co., Conneaut, Ohio

Cochrane-Bly Metal Saws

Excel in Design, Workmanship and Efficiency

Made in six sizes—3-inch to 8-inch capacity



No. 5. 6-inch Type

Carriage extends solid underneath the ways. No bolted on gibs.

Extra large spindle hardened and ground.

Powerful drive through hardened gears.

Positive screw feed—10 changes.

Two speeds to saw spindle.

Oil pumps, automatic stop and return.

**This machine has maintained a daily output of
96 pieces of 5½-inch steel**

Our catalogue gives full description

Cochrane-Bly Company

118 St. James St., - Rochester, New York, U.S.A.

Also manufacturers of Saw Sharpening and Filing Machines

For Quick Cutting Of Steel

The Abrasive Metal Cutter has established most enviable records.



Why waste time and material with the crude, old fashioned method of notching and breaking high speed steel? The "Abrasive" cuts pieces $\frac{1}{2}$ -inch square in 10 seconds, and can cut all your stock quicker, cheaper and better than it can be done in any other way. Besides saving you from 10 to 20 per cent of the material, it will also save from 15 to 30 minutes time usually spent in grinding each cut to shape. Air hardened or carbon steel, brass or bronze, are all cut with the same facility.

For cutting extra thin or flexible tubing, or tubing filled with wire or rubber, it has no equal, for it never leaves a bur. Cuts any stock up to 2-inches, round or square, and never draws the temper.

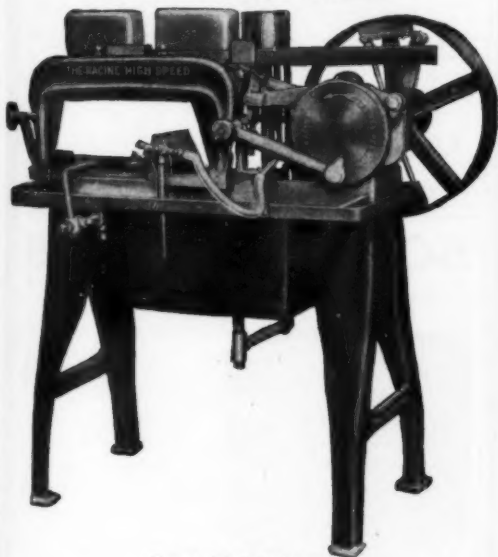
For up-to-date metal cutting you need the "Abrasive";
Let us convince you

Slack Manufacturing Company
Springfield, Vermont

This is The Machine

That cuts 6-inch Machinery Steel in 28 Minutes

A trial order a sure customer

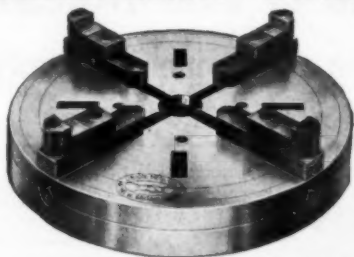


Patented July-13-1909

Let us send you one on 30 days' trial

Racine Gas Engine Company
Dept. 9, Racine, Wis.

Combination Chucks



Reversible Jaws, and made for ordinary machine shop work.

Union Manufacturing Company
New Britain, Conn.

26 Cortlandt St., New York
Makers of a complete line of CHUCKS

SODA KETTLES

HEATED WITH GAS



10 Gallon and 30 Gallon
Capacity

Convenient and Economical
Low in Price

We Also Manufacture

Arbor Presses

Bench Straightening Presses

Drill Press Vises

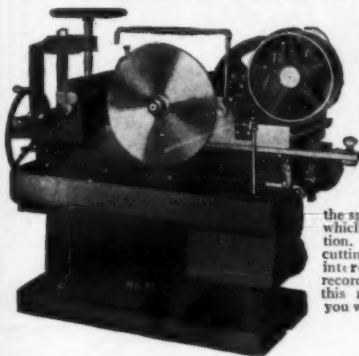
Circulars ?

The Cleveland Machine Specialty Co.

202-204 St. Clair Ave. N. E., Cleveland, Ohio

It Will Cut Steel Quickly and Economically

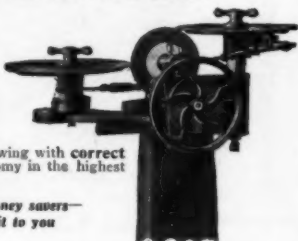
Because the Saw has the Right Shaped Teeth
and the Machine Plenty of Power



That's all there is to it. You can use a thin saw on our No. 84, and drive it at the speed that gives it the highest cutting effect, reducing both time and cost. One of the special features is the spur gear drive, which reduces friction. Our folder on cutting steels shows interesting time records made with this machine. Do you want one?

Correctly Shaped Saw Teeth mean more work done

Our Automatic Saw Sharpening and Beveling Machine shapes them right. As it sharpens them, it also bevels every other tooth on opposite sides, giving it the relief which prevents clogging and enables the saw to run faster and do more work. Sawing with correct teeth means saw economy in the highest sense of the word.



*These are real money savers—
Let us prove it to you*

Nutter & Barnes Company

326 A Street, Boston, Mass.

Sweetland Geared Scroll Chuck

The Chuck of Largest Capacity and the Heaviest is the SWEETLAND



The Chuck with NO SHELL TO BREAK in joints is the SWEETLAND

The Hoggson & Pettis Mfg. Co., New Haven, Conn.

Common Chuck troubles overcome by using Chucks that have "our"

Hardened Steel Bushings

"Independent"



Four Jaw Chucks

PATENTED AUGUST 3, 1909

THE CINCINNATI CHUCK CO., Cincinnati, Ohio

Chicago Branch:
559 W. Lake St.

New York Branch:
136 Liberty St.

Rogers' "Talks"

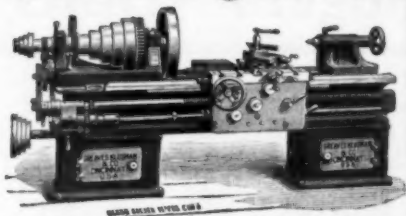


Fixed Caliper Gauges

These little portraits from life leave nothing to be said concerning the "looks" of two of our most popular measuring devices. We strongly suspect that popularity of being due to their "get-up," which is thus: Fine steel, extreme care in every detail of workmanship, and a "know-how-ness" of long standing. Made in sizes from $\frac{1}{4}$ to 6 inches by sixteenths or in any special size called for. We are well equipped for doing extra delicate machine work and are both able and willing to take the trouble to make a success of such jobs. Glad to hear from you whenever you have such to be "did." Our small tool catalog might interest you. Shall we mail it? No. 23.

John M. Rogers Works
Gloucester City, N. J.

Standard Engine Lathes



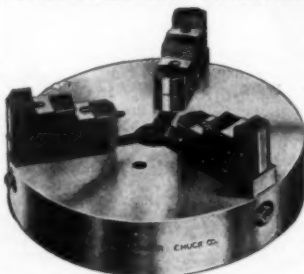
Simple Accurate Powerful Convenient

Furnished with either standard 5-step cone or with 3-step cone double-back-geared, **carrying a wide belt**, with 18 speeds and wide feed range.

GREAVES, KLUSMAN & CO

Cincinnati, Ohio, U. S. A.

The Skinner Universal Chuck



Designed especially for accurate work. Strongly made in every part, and carefully tested for accuracy. Made in all sizes from 3 in. to 42 in., with 3 or 4 jaws as required. Equipped with different style jaws to suit different requirements. Adaptable to a large variety of work which makes it a valuable lathe equipment. If you

have any chucking proposition, write us and we will supply your needs promptly and to your complete satisfaction. Want our catalog sent to you free?

The Skinner Chuck Co.

Factory,
New Britain, Conn.

94 Reade St.,
New York City.



Caps Won't Jar Off Of Tucker's Positive Lock Compression Grease Cup

For automobiles and all kinds of machinery having excessive vibration. Sample sent by mail on receipt of cash, check or money order.

Made in three sizes

	Price
No. 000 $\frac{1}{4}$ in. $\frac{1}{2}$ in. pipe	\$0.40
No. 001 $\frac{1}{2}$ in. $\frac{3}{4}$ in. pipe	0.50
No. 0 $1\frac{1}{4}$ in. $1\frac{1}{2}$ in. pipe	0.60

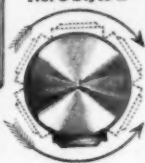
PATENTED JANUARY 11, 1910

Tucker's Oil Hole Covers

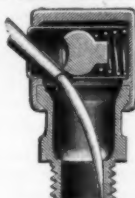


Style C, Self Closing

No. 5 Style B



Self Closing



Style A



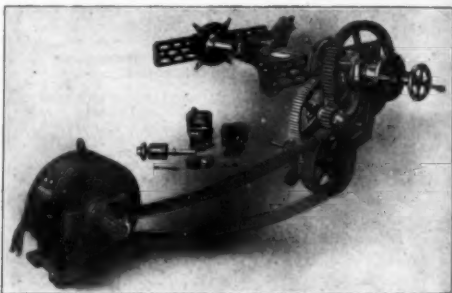
Send for Catalogue of full line for all kinds
of machinery having oil holes

W. C. & F. C. Tucker, Hartford, Conn.

Portable Boring Bars

Are Great Time and Money Savers

Designed especially for boring cylinders in place, but equally well adapted for the boring of all kinds of engines, pumps, air compressors, steam hammers, valve seats, etc.



Portable Boring Bar, Driven with Motor and Silent Chain.

Driven either by hand or power, they do as accurate work as can be done in any machine shop, and with such big saving of time and labor that the cost of the tool is often returned on a single job. It has fixtures for boring in any position, and in very cramped places, being readily operated in a space which allows the taking of the piston out of the cylinder. We can make special sizes for special work.

Our Catalogue will also tell you about our Portable Millers, Facing Arms, Rotary Valve Seat Planers, Radius Planer Attachment for planing links, etc., Circular Planing Tool for driving boxes, Machines for turning crank pins, facing domes and cylinder flanges, turning eccentrics, etc

H. B. Underwood & Company

1022 Buttonwood St., Philadelphia, Pa.

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Price
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Buffin
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C. A. S.

Air com
Bolt cut
Boring
of cho
Drill pr
Engine l
Milling
Screw m
Screw m
Shaper, c

The Ran

Horizont
p., for a

Corliss, fr
Automatic

22 in. x 8 ft

Duplex br

26x36 in. x 1

PIP
2 1/2 to 12 in.
motor dri

Heaters, p
Write for

Sole manu
for circul

Second-Hand Machinery.

Lists of second-hand machinery, either for sale or wanted, will be published under this heading at the rate of **40 cents a line**, across the page, each issue, with a minimum charge of **\$4.00**. Sub-headings are counted as one line, but the name and address of advertiser are not included in the space charged for. Prices and full descriptions of the machines listed will be furnished by the parties offering them for sale. If you do not find what you require, use the slip inclosed with each book to make known your wants to the publisher.

FOR SALE BY

International Watch Co., New and Ludlow Sts., Jersey City, N. J.

All our machinery and tools. Retiring from business.
A few as follows—list on application: 65 Duane St., New York City.
Sloan & Chace wheel cutters, gear-cutters, pinion cutters, staff lathes.
Buffing plant. Buffing lathes. Stillwell No. 6 blower.
Hartford automatic screw machines. Sensitive drill presses.
Hartford automatic Stehli screw machines. Jewelers' lathes.
Hartford automatic stud and pin machines.
Case and bench lathes; wig-wags; sub presses.
All kinds of machinery for clock, watch and electric manufacture.

FOR SALE BY

C. A. Strelinger Co., - Bates & Congress Sts., Detroit, Mich.

Air compressor, 16x12 in. type EE-1 Ingersoll.
Bolt cutter, 1 in. Adams, complete.
Boring and turning mill, 38 in. Haush, plain table, 2 swivel heads and set of chuck jaws.
Drill press, 23 in. W. F. & J. Barnes, stationary head.
Engine lathe, 16 in. x10 ft. LeBlond, standard type, with compound rest.
Milling machine, No. 3 Fox, hand and power.
Screw machines, 2 in. Cleveland (2).
Screw machine, No. 2-A. Pratt & Whitney, automatic.
Shaper, crank, Lodge & Davis.

FOR SALE BY

The Randle Machinery Co., 1739 Powers St., Cincinnati, O.

BOILERS.

Horizontal tubular, from 6 to 150 h. p. Fire box, from 8 to 80 h. p.
p., for all pressures. Vertical, from 3 to 50 h. p.

ENGINES.

Corliss, from 50 to 350 h. p. Throttling, from 5 to 150 h. p.
Automatic, from 25 to 180 h. p.

LATHES.

22 in. x 8 ft. Niles. 60 in. Stevens, pulley.
MILLER. TOOL GRINDER.
Duplex brass miller. Springfield tool grinder.

PLANER.

26x36 in. x12 ft. Kidd. BOLT CUTTER.

PIPE THREADER.

2 to 12 in. Eaton, Cole & Burnham, 1 to 14 in. Sellers.
motor drive. AIR COMPRESSOR.

8x6x9 locomotive type.

MISCELLANEOUS.

Heaters, pumps, tanks, blowers, exhausters, saw mill and general machinery.
Write for list. Also a full assortment of new machinery.

Sole manufacturers of the celebrated "Leader" Injectors and Ejectors. Send for circulars.

SECOND-HAND MACHINERY

FOR SALE BY

The H. A. Stocker Machinery Co., 566-72 W. Randolph St., Chicago

TURRET LATHES AND SCREW MACHINES

- 2x24 Jones & Lamson flat turret, single drive, geared heads, latest type, including attachments, good condition (2).
 2x24 J. & L. flat turret, 1896 pattern, outfit of tools, splendid working order.
 20 in. Fay & Scott universal turret, complete, practically good as new.
 22 in. No. 4 Potter & Johnston double turret, used less than a year.
 21 in. Gisholt turret lathe, new in 1907, good order.
 24 in. Cleveland auto. screw mche., bought new in 1907, good working cond.
 4 in. Cleveland automatic screw machine, present pattern, good order.
 No. 00 Brown & Sharpe automatic, latest pattern.
 No. 51 National-Acme automatic screw machine, latest pattern, never used.
 1 in. Brown & Sharpe automatic screw machine, 1891 pattern.
 No. 2 Brown & Sharpe screw machine, wire feed, automatic chuck.
 No. 4 Bardons & Oliver, 1½ in. wire feed capacity.

MILLING MACHINES.

- No. 4 Brown & Sharpe, universal.
 No. 1 Cincinnati universal, 1902.
 No. 1 Garvin universal.
 No. 2 Brown & S., plain, geared fds.
 No. 1 Brown & S., plain, geared fds.
 No. 24 Brown & Sharpe, plain.
 No. 18 Kempsmith plain, back gd.
 No. 1B Kearney & Trecker, geared feeds, geared head, single pulley drive.
 No. 13 Garvin, plain, dividing head, vertical attachment.
 No. 12 Garvin, plain, with vise.
 No. 2 Cincinnati, plain, 1909 pattern.

GEAR CUTTERS

- 50 in. Gould & Eberhardt auto., for spur, bevel and skew gears, good as new.
 42 in. Gould & Eberhardt auto., for spur gears only, 1899 pattern, good order.
 26 in. No. 3 Brown & Sharpe automatic, fine condition.
 Grant-Lees worm gear hobbing machine, just like new.
 Dwight Slate automatic pinion cutter.

LATHES

- 50x20 New Haven, triple geared.
 32x12 Schumacher & Boye.
 30x16 Flather.
 24x18 Fitchburg.
 24x16 Fitchburg.
 37 Lathes, 10 to 18 in. swing, 4 to 12 ft. bed, assorted makes.
 24x12 Shepard, cheap.
 24x10 Lodge & Shipley, motor dr.
 22x10 Lodge & Davis.
 20x14 Lodge & Shipley, quick change gear, fine condition.

RADIAL AND UPRIGHT DRILLS

- 7 ft. Prentice Bros., gr. box drive.
 6 ft. Bickford, gear box drive.
 5 ft. Bickford, gr. box & motor dr.
 6 ft. Fosdick, cone drive.
 5 ft. Western, cone drive.
 About 20 drills, 24 in. and smaller.
 4 ft. Bickford, cone drive.
 34 in. Barnes, sl. hd., b. g., p. f.
 31 in. Barnes, sl. hd., b. g., p. f.
 28 in. Snyder, sl. hd., b. g., p. f.
 26 in. Prentice Bros., sl. hd., b. g., p. f.

PLANERS.

- 48x48x20 Bellmer, 4 heads, quadruple geared, fine condition.
 48x42x12 Pond, 2 heads, rebuilt.
 36x36x12 Gray, 2 hds., A-1 cond. (2).
 36x36x12 Cincinnati, 2 heads., just about good as new.
 32x32x14 Flather standard and open side, 2 heads, fine condition.
 30x20x10 Flather, 2 hds., 4 speed dr.
 30x30x12 Gray, 2 heads, fine.
 30x30x8 New Haven, 1 head, 7 smaller planers.

SHAPERS.

- 20 in. Cincinnati, back gd., crank.
 20 in. Smith & Mills, geared.
 18 in. Fitchburg, trav. head.

KEYSEATERS.

- 60 in. Morton, portable.
 48 in. Morton.
 No. 00 Baker Bros.

GRINDING MACHINES.

- 18x96 in. Norton plain, complete, little used.
 8x32 in. Landis, complete with full list of attachments, fine condition.
 Milwaukee wet tool grinder.
 Whitney wet tool grinder.
 Tool room grinder for lathe, planer and shaper tools, Sellers, also twist drill attachment.
 No. 3 Bath, univ. cutter and tool, full complement of attachments.
 No. 2 Brown & Sharpe, surface grinder, with magnetic chuck

No. 96
 No. 4 A
 No. 3 A
 Full line

16-16 ft.
 76 in. B.
 32 in. R.
 42 in. B.
 36 in. o.
 42 in. N.

42 in. thr.
 36 in. thr.
 No. 4 Ci.
 This li.
 tools be.
 no matte.
 it for you.

Beronic

12x10x6 1/2
 pressure
 We deal in

Don M. O.

500 lb. Bem.
 2,000 lb. Be.

22 in. Amer.
 chuck and
 25 in. x 10 ft
 three ste.
 riage with
 30 in. x 31 ft.
 35 in. x 12 ft.
 64 in. x 24 ft.
 60 in. x 42 1/2 ft.
 60 in. x 45 ft.
 66 in. x 35 ft.
 64 in. x 60 ft.
 centers; on
 2 carriages;
 length of b
 will sell ch
 120 in. x 18 ft.

12x24x6 Pease
 60x60x18 Betts

Slotter, 24 in.
 condition, p
 If you have us

SECOND-HAND MACHINERY

(The H. A. Stocker Machinery Co.—Continued)

POWER PRESSES.

No. 95 Bliss, gd., 3 bolster plates. | No. 3 Perkins.
No. 4 American Can, o. b., inc. | No. 2 American Can (2).
No. 3 American Can, o. b., inc.
Full line Walsh new presses always in stock.

BORING AND TURNING MILLS.

10-16 ft. Niles, 2 heads, motor drive, large assortment of attachments.
76 in. Bullard, 2 heads and central boring head, table fixtures.
32 in. Rogers, 2 heads, motor drive, 7½ h. p. Northern Electric motor.
42 in. Bullard, single swivel turret head, chuck table, thread cutting.
36 in. old style, good for pulley work, will sell cheap.
42 in. Niles car wheel borer, with crane and chuck table.

PUNCHES AND SHEARS

42 in. throat Bement single end punch and shear, cap. 4x1½ in.
36 in. throat Humphrey single end punch and shear, cap. 1½x1½.
No. 4 Cincinnati single end, 8 in. throat, cap. 4x4 in.

This list includes only a part of our stock, and besides, we list for sale odd tools belonging to customers; therefore, if you favor us with your inquiries, no matter what you want in the machine tool line, we can most likely locate it for you.

FOR SALE BY

Beronio & Palmer, 221 Jefferson Ave., - - Memphis, Tenn.

AIR COMPRESSOR.

12x10x12 Laidlaw, Dunn & Gordon, straight line, 2 stage, made for 300 lbs. pressure to the square inch; good as new.
We deal in all kinds of second hand machinery.

FOR SALE BY

Don M. Osborne, - 719 St. Clair Ave., N. E., Cleveland, Ohio

HAMMERS.

500 lb. Bement, steam, single frame. | 5,000 lb. drop, friction board, Toledo,
2,000 lb. Bement, steam, dbl. fr. \$750 | for sheet metal work.

LATHES.

22 in. American turret lathe, 4½ in. hole thru spindle, with pump, scroll chuck and Reeves variable speed countershaft.
25 in. x 10 ft. LeBlond heavy turret lathe, with power feed turret on shears, three step cone, double back geared quick change, 24 in. chuck, heavy carriage with compound rests.
30 in. x 31 ft. Ohl & Co., triple geared, 25 ft. between centers, comp. rests.
35 in. x 12 ft. Hughes & Phillips, triple gear, compound rest, \$250.
48 in. x 24 ft. Michel, triple back geared, compound rest, 18 ft. centers.
60 in. x 42½ ft. Hughes & Phillips, tr. gd., c. r., 33 ft. between centers.
60 in. x 45 ft. Roach, triple geared, 35½ between centers, compound rest.
66 in. x 35 ft. Hughes & Phillips, triple geared, 26 ft. centers, 48 in. raised to 66 in.
64 in. x 60 ft. Thomas Shanks & Co., Glasgow, double lathe, 50 ft. between centers; one end swings 64 in., other 50 in.; 2 head stocks, 2 tail stocks and 2 carriages; triple back geared at both ends; one carriage has screw feed full length of bed, the other has double tool post and feeds half length of bed; will sell cheap.
120 in. x 18 ft. gap lathe, triple geared, compound rest.

PLANERS.

12x24x6 Pease, single head. | 96x96x20 Betts, single head, good order, cheap.
60x18 Betts, 4 hds., good cond.

SLOTTER.

Slotter, 24 in. Niles, actual stroke of bar 60 in., for outside work; excellent condition, price reasonable.

If you have used machine tools for sale or exchange, advise me.

SECOND-HAND MACHINERY

FOR SALE BY

J. J. McCabe,

30 Church St., New York City.

LATHES.

- 102 in. swing triple geared, 30 ft. bed, for the heaviest work, Bement.
 84 " " triple geared, 24 ft. " Boston.
 82 " " triple geared, tailstock and carriage.
 79 " " driving wheel, double head, Niles Tool Works.
 60 " " driving wheel, double head, Bement.
 69 " " triple geared, 24 ft. bed, Fitchburg.
 64 " " triple geared, 36 " " Bement.
 54 " " triple geared, 21 " " Fitchburg.
 48 " " triple geared, 24 " " Bement.
 48 " " triple geared, 16 " " Bement.
 48-26 in. swing triple geared, 14 ft. bed, double spindle, McCabe.
 43 in. swing back geared, 20 ft. bed, taper, American.
 28 " " back geared, 16 " " Putnam.
 38 " " triple geared, 12 " " Gleason.
 32 " " back geared, 17 " " Bement.
 32 " " triple geared, 14 " " Fitchburg.
 30 " " back geared, 23 " " Pond.
 28 " " back geared, 15 " " Worcester.
 28 " " triple geared, 14 " " Harrington.
 27 " " back geared, 20 " " Pond.
 26 " " back geared, 13 " " taper, Bement.
 25 " " back geared, 16 " " Lathe & Morse.
 24 " " back geared, 14 " " Blaisdell.

Other sizes, standard makes.

PLANERS.

- 72 in. x 24 ft., spiral geared, Wm. Sellers & Co., 4 heads.
 54 " x 16 " spiral geared, Wm. Sellers & Co., 4 heads.
 51 " x 16 " spur geared, Bement, 2 heads.
 42 " x 18 " spur geared, Niles, 2 heads.
 36 " x 12 " spur geared, Niles, 3 heads.
 36 " x 9 " spur geared, Sellers, 2 heads.
 36 " x 8 " spur geared, Bement, 2 heads.
 34 " x 14 " spur geared, Gleason, 1 head.
 32 " x 10 " spur geared, Pond, 2 heads.
 30 " x 8 " spur geared, Pond, 1 head.
 Other sizes of Planers—all standard makes.

BORING MILLS AND SLOTTERS.

- 7 ft. upright boring and turning mill, 1 head, Niles Tool Works.
 6 " upright boring and turning mill, 2 " Sellers.
 5 " upright boring and turning mill, 2 " Niles Tool Works.
 4 " upright boring and turning mill, 2 " Colburn.
 3 " upright boring and turning mill, 1 " Bullard.

Horizontal floor boring, drilling and tapping machine, with floor plate, double column and attachments, Niles.

Horizontal boring and drilling machine, 24 in. spindle, Bement.

36 in. slotting machine, all the automatic feeds to table, Betts.

18 " slotting machine, all the automatic feeds to table, Bement.

12 " slotting machine, all the automatic feeds to table, Sellers.

RADIAL DRILLS.

- 6 ft. arm plain, separate box table, William Sellers & Co.
 5 " arm plain, separate box table, Baush.
 5 " arm full universal, heavy pattern, Bement.
 4 " arm full universal, Niles.
 4 " arm half universal, Niles.

TURRET LATHES AND SCREW MACHINES.

- 32-50 in. swing Gisholt turret lathe, with carriage and turret.
 24 in. swing Gisholt turret lathe, with carriage and turret.
 32 " " Gisholt type turret lathe, with chucks and tools.
 27 " " Gisholt type turret lathe, with chucks and tools.
 24 " wire feed screw machine, with turret, etc., Pratt & Whitney.
 14 " wire feed screw machine, with turret, Bardons & Oliver.

SECOND-HAND MACHINERY

(J. J. McCabe—Continued)

MILLING MACHINES.

Slab miller, 34 in. x 11 ft., all attachments, Newton.
Slab miller, 22 in. x 5 ft., all attachments, Ingersoll.
Vertical miller No. 5, with rotary attachment, Becker-Brainard.

RAILROAD TOOLS.

Car wheel grinder, double head, for handling both wheels one operation, Springfield.
Double end axle and centering machine, Bement.
Double headed axle lathe, 27 inch swing, 16 ft. bed, Bridgeford.

MISCELLANEOUS.

Bending rolls, 10 ft. Hilles & Jones, drop end housing.
Bending rolls, 6 ft. Hilles & Jones, solid housing.
Steam hammer, 1,250 lbs., double frame, Bement.

FOR SALE BY

O. L. Packard Machinery Co., . Chicago, Ill., and Milwaukee, Wis.

LATHES.

22-36x22, plain rest.	72x22, comp. rest, with raising blocks to increase swing to 120 in.
36-50x18 Fifeild, compound rest.	
36 in. chucking.	

PLANERS.

24x24x7 Pease.	24x24x6 Hendey.
24x24x5 Pond, 2 heads on cross rail.	

DRILLS.

5 ft. Cincinnati full universal radial.	23 in. Barnes, power feed.
40 in. New Haven upright.	

MILLERS.

No. 6 Brown & Sharpe universal, vertical attachment.	No. 5 Garvin, plain.
No. 2 Becker-Brainard vertical.	No. 24 Gesterlein, plain.

MISCELLANEOUS.

Die milling machine, Thurston.	Hammer, steam, 250 lbs. Bell.
Gear cutter, 36 in. Brainard.	Riveter, 4 in. Shuster.

FOR SALE BY

The Osborne & Sexton Machinery Co., . Columbus, Ohio.

LATHES.

2x24 in. Jones & Lamson turret.	16x10 L. & S., quick change, taper.
12x5 W. C. Young, compound rest.	26x10 Pond, compound rest, p. c. f.
14x6 Monarch, c. r., p. c. f.	48x18 Fifeild, triple geared.
15x5 turret on shears.	34 in., gap, turret on ways.

PLANERS AND SHAPERS.

24x24x6, 1 head.	14 in. Hendey.
30x30x12 Bement-Daugherty.	20 in. Smith & Mills, back geared.

DRILL PRESSES.

4 spindle sensitive.	26 and 28 in. Prentiss, sliding head.
20x21 in. plain and back geared.	54 in. Sellers, comp. table, b. g., p. f.

MISCELLANEOUS.

Cock grinder, double.	Hammers, 450, 750, 3,000 and 5,000 lbs., Toledo friction board drop.
Flexible shaft drill, complete.	Presses, foot, No. 1 Consolidated (6).
Gas engines, 10, 15, 22, 25 and 100 h.p.	Presses, power, No. 2 Consolidated (2).
Grinder, universal, Brown & Sharpe.	Tapping machine, Webster & Perks.
Hack saws, Nos. 1, 2 and 3.	
Hammer, steam, 1,100 lb., Morgan.	

We have other second-hand machines. Mail us your requirements.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company, 111 Broadway, New York.
Located at Chicago, Boston and New York.

LATHES.

12x5 LeBlond, rise and fall rest.	16x6 Blaisdell, rise & fall rest.
12x6 Champion, compound rest.	18x6 Blaisdell, rise and fall rest.
14x6 F. B. Miles, compound rest.	19x6 D. W. Pond, turret tool post.
14x6 LeBlond, compound rest.	21x6 Bridgeport, turret boring.
16x6 speed lathe.	21 and 48 in. Harrington, gap, boring and chuck.
14x5 American, square arbor.....\$ 50	21x8 Star, turret carriage.
16x6 N. & W. bolt lathe, pl. rest 90	22x16 Fitchburg.
16x6 Fitchburg, compound rest.	32x10 Pond, compound rest.
16x6 Blaisdell, compound rest.	

TURRET MACHINERY.

1 in. No. 1 Garvin, wire feed.....\$125	1 in. No. 0 Hartford, automatic.....\$23
1 in. No. 0 Pratt & W., wire feed.	1 1/2 in. National Acme, 4 spindle automatic..... 150
1 in. No. 1 Costello, wire feed.....\$165	1 in. No. 1 Spencer, single turret, automatic..... 100
2x24 in. Jones & L., flat turret.	21-32x1 1/2 in. No. 2 B. & S., auto. 200
2x in. Conradson, semi-automatic.	1 in. No. 2 Hartford, Pratt & Whitney, 2 spindle..... 300
20 in. size J, Gisholt.	
1 in. No. 00 Hartford, Pratt & Whitney, automatic..... 275	

SHAPERS AND PLANERS.

15 in. Hendey, friction.	26x23 in. x 16 ft. Ferris & Niles, 2 hds.
18 in. Cincinnati, dbl. hd., traverse.	30x30 in. x 24 ft. Sellers, 2 heads.
18x15 in. Blaisdell, crank.	32x32 in. x 14 ft. Niles.
17x17 in. x 4 ft. Whitcomb.	48x48 in. x 16 ft. Belmar Eames, 4 hds.
26x26 in. x 6 ft. Pond.	72x72x24 in. Sellers.

DRILLS.

9 in. No. 1 Pratt & Whitney, bench.	6 ft. 10 in. Niles No. 2, semi-univ.
13 in. No. 1 sensitive friction, 110 volt, d. c. motor.	7 ft. 6 in. Niles No. 5, full univ.
No. 3 Barr, sensitive.	10 in. 2 spindle Slate, sensitive.
30 in. Gould & E., sliding head.	12 in. 2 spindle Foote-Burt, sensitive.
36 in. Gould & E., sliding head.	14 in. 3 spindle Garvin, gang.....\$ 60
48 in. Niles, sliding head.	14 in. 4 spindle D. P. N..... 75
Prentiss port, univ. rad., cap. 2 in.	17 in. 4 spindle J. & L., gang..... 75
3 ft. Gair, plain radial.....\$200	14 in. 6 spindle No. 3 Garvin, gang.
4 ft. 6 in. Barr, plain radial..... 200	6 spindle special Langelier.
5 ft. Niles, semi-universal.	No. 10 10 spindle Pratt & Whitney, cap. 1 1/2-16 in., 220 v., d. c. motor.
5 ft. 6 in. Niles, outboard col.	

BORING MILLS.

36 in. No. 2 Brown & S., vert. turret.	Nicholson & Waterman boring machine, 3 in. spindle.
37 in. Bullard, vertical, 2 heads.	Bement & Son horiz., 2 1/2 in. spindle.
21 in. Pond, 3 heads.	Stearns 96 in. special cylinder borer.
Kelly horizontal, 2 in. spindle.	

GRINDERS.

14x2 in. Gould & E., water tool \$ 25	Diamond polishing stand.....\$ 15
18x2 in. Pedrick, double wet tool 20	No. 0 Northampton polishing jack.
24x3 in. Pedrick, double wet tool 75	Swing frame grinder and polisher
20x1 1/2 in. Ransom, water tool.	Diamond.....\$ 45
3 in. Sellers drill grinder.	No. 1 Blount.

MILLING MACHINES.

No. 1 Milwaukee, plain, 23x7 1/2x18 in.	No. 4 Brown & Sharpe, universal, 40x7x2 in.
No. 2 Smith & Garvin, hand.....\$ 50	No. 4 1/2 Becker-Brainard, plain, 24x7 1/2 in.
No. 2 Garvin single spindle profiler, 14x10 in..... 275	Smith & Garvin, pl., 24x6x10 in.
No. 2 Brown & Sharpe, universal, 20x10x16 in.	No. 4 1/2 Garvin, plain, 24x9x19 in.
No. 2 Garvin, plain, 31 1/2x5x16 in.	Garvin single spindle profiler, table 21x24 in.....\$200
No. 3 Carter & Hakes, plain, 31x6 1/2x13 1/2 in.	1 in. Garvin hor. screw slotter... 40

Arbor
Bicycle
Brazil
Cut-off
Cut-off
Hack
Hamm
Forging
Iron f

The C

15x5 D
16x6 A

24x24x
24x24x
26x28x
30x30x
30x30x

Boring
Food
Drill, I

Bertsc

30 in. S
40 in. S

No. 2 P
No. 4 S

Boiler,
Engine
engine

Gap she
Bending
Crimpin
Forming
Plain co
Punch a
Punch a
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Grinder,
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SECOND.HAND MACHINERY.

(Niles-Bement-Pond Company—Continued.)

MISCELLANEOUS.

Arbor press, power, 3 in. screw. \$ 50	Melting furnace, 20 gal. babbitt \$ 25
Bicycle tube hand rolls ----- 20	Planer vise, 16x3 $\frac{1}{2}$ in. ----- 25
Brazing furnace, gasoline, 24x16 in.	Planer vise, 10x2 in., swivel base 30
Cut-off machine, 2 $\frac{1}{2}$ in. Betts. \$ 75	Press, bench, No. 0 Stiles pattern.
Cut-off machine, 3 $\frac{1}{2}$ in. H. & R. 50	Punch and shear, combination,
Hack saw, No. 2 Robertson.	power, $\frac{1}{2}$ in. capacity. ----- \$ 25
Hammer, power, 350 lb. Lingle.	Spiral spring winding mche., Shuster.
Forging machine, 2 in. Blakesle.	Tapping mche., horiz., No. 1 Garvin.
Iron forge on legs, 28x13x8 in. 25	Vulcanizer, rubber, Hartford, small

FOR SALE BY

The Cincinnati Planer Co., - - - **Cincinnati, Ohio.**

LATHES.

15x5 Dreeses, turret.	16x16 screw, automatic.
16x6 American, taper attachment.	

PLANERS.

24x24x6 L. W. Pond, 1 head.	34x24x12 Cincinnati, 2 heads.
24x24x6 Cincinnati, 1 head.	36x36x14 Chandler, 2 heads.
28x28x8 Cincinnati, 1 head.	60x48x19 Cincinnati, 4 heads, variable speed.
30x30x12 Cincinnati h. p.	74x56x20 L. W. Pond, 2 heads.
30x30x14 Cincinnati, 2 heads, l. p.	

MISCELLANEOUS.

Boring and drilling machine, No. 1	Drill, 5 ft. Fosdick, pl. radial, par. dr.
Fosdick, horizontal.	Gear cutter, 60x18 in. Gould & E.
Drill, 14 in. American, sensitive.	Shaper, 15 in. Springfield, crank.

FOR SALE BY

Bertsch & Co., - - - **Cambridge City, Ind.**

LATHES.

20 in. Schellenbach, pulley.	50x70 in. Putnam.
40 in. Schellenbach, pulley.	8 ft. pit lathe.

BLOWERS.

No. 2 Roots.	No. 5 Sturtevant.
No. 4 Sturtevant, fan.	No. 9 Buffalo Forge Co.

ENGINES AND BOILERS.

Boiler, fire tube, 40 in. x 12 ft.	Engine and boiler, portable, 20 h. p.
Engine and boiler, Lucas portable,	J. I. Case.
engine 4 $\frac{1}{2}$ x8 in.	Engine, stationary, 6x14 in.

SHEARS, PUNCHES, BENDING ROLLS.

Gap shear, 8 $\frac{1}{2}$ ft., treadle power, 15 in. throat, No. 20 gauge metal.	
Bending roll, 18 ft., $\frac{1}{2}$ in. plates.	
Crimping roll, 7x37 in., with 7-16 in. "V" corrugations.	
Forming roll, 6x62 in., hand power, $\frac{1}{2}$ in. plate.	
Plain corrugated roll, 5x31 in., 2 11-16 in. centers, hand and power.	
Punch and shear, 15 in. throat, Bertsch & Co., cap. $\frac{1}{2}$ in. in $\frac{1}{2}$ in.	
Punch and shear, 42 in. throat, Cincinnati, cap. 1 $\frac{1}{2}$ in. in 1 $\frac{1}{2}$ in.	
Punch and shear, 48 in., capacity 4 in. in 1 in.	
Stake riveter and punch, 36 in. throat, Rock River, cap. $\frac{1}{2}$ in. rivets, or to punch $\frac{1}{2}$ in. in $\frac{1}{2}$ in.	

MISCELLANEOUS.

Bolt cutter, 1 $\frac{1}{2}$ in., hollow spindle.	Pipe threading machine, 2 in.
Bolt cutter, 2 in., hollow spindle, back geared.	Ripsaws, 12 in. (2).
Crane, 30 ft., hand power, 176 ft. travel.	Shaft straightener, 25 ft., back gd.
Drill, double spindle, Baker.	Timber dresser, 24 in. x24 ft. Daniels.
Grinder, wet knife, 3 ft. Diamond.	Tool grinders, double heavy, (4).
Nut tapper, 4 spindle.	A lot of hangers, line shafting and pulleys.

SECOND-HAND MACHINERY

FOR SALE BY

Marshall & Huschart Machinery Company,
11-13-15 N. Canal St., Chicago. 45-47 S. Capitol Ave., Indianapolis.
908 N. Second St., St. Louis. 611 Pabst Bldg., Milwaukee.

GOING TO MOVE.

Rather than move second-hand machinery to our new building, we will give customers a considerable reduction in price.

BOLT CUTTERS.

- 14 in. Economic, single head, complete set of dies, tap, chuck, countershaft,
- 14 in. W. & P., double head.
- 2 in. Acme, single head.

BORING MILLS.

- Binsse horizontal, 24 in. bar, 36 in. table.
- 30 in. Bullard, swivel turret head, three jaw combination chuck.
- 42 in. Bullard, single turret head, three jaw combination chuck.
- 14-20 ft. Niles extension boring and turning mill, two heads.

DRILLS.

- Rockford, gear driven, bench.
- Barnes, friction drive.
- 12 in. Rockford, upright.
- 28 in. Aurora, sliding head, power feed, back geared.
- 3 ft. Economic plain radial, cone drive, box table.
- 50 in. W. F. & John Barnes, arranged for motor drive, including three h. p. direct connected motor.

LATHES.

- 18 in. x 6 ft. Lodge & Davis, hollow spindle, plain rest.
- 21 in. x 8 ft. Blaisdell, hollow spindle, plain rest.
- 26 in. x 10 ft. Pond, solid spindle, plain rest.
- 26 in. x 12 ft. Reed, hollow spindle, compound rest.
- 28 in. x 26 ft. Ames, triple geared.
- 42-61 in. x 16 ft. Ames, triple geared.
- 56 in. x 22 ft. Featherstone, triple geared, compound rest.

PLANERS.

- 24x24 in. x 6 ft. Ohio, one head on cross rail.
- 24x24 in. x 6 ft. Powell, one head on cross rail.
- 24x24 in. x 6 ft. Whitcomb, one head on cross rail.
- 27x27 in. x 7 ft. New Haven, one head on cross rail.
- 27x27 in. x 8 ft. Ohio, one head on cross rail.
- 28x28 in. x 7 ft. Wheeler, one head on cross rail.
- 30x30 in. x 7 ft. New Haven, one head on cross rail.
- 36x36 in. x 10 ft. Pratt & Whitney, one head on cross rail.

MISCELLANEOUS.

- Axle cut-off lathe, Rement, double head.
- Cut-off saw, No. 1 Q. & C.
- Cutting-off machine, 3 in. Hurlburt & Rogers.
- Gear cutter, 33 in. Gould & Eberhardt.
- Grinder, cutter, No. 2 Brown & Sharpe.
- Grinder, cylinder, No. 50 Saxon.
- Hammer, steam, 800 lb.
- Keyseater, No. 2 Baker (Colburn).
- Notching press, 36 in. Ferracute.
- Pipe machine, Saunders, hand.
- Screw machine, 4 in. Cleveland automatic.
- Shaper, 17 in. Barker & Chard.
- Shaper, 24 in. Steptoe.
- Shaper, 32 in. Walcott.
- Slotter, 10 in. Putnam, circular table.
- Turret lathe, 28 in. Pond.

The above comprise only a partial list of the machines which we have to offer. Send for our complete second-hand list.

See our demonstrating room.

SECOND-HAND MACHINERY

FOR SALE BY

Prentiss Tool & Supply Co., New York, Boston, Buffalo, Syracuse
LATHES.

12x5 Robbins, compound rest, power cross feed.
14x6 Lodge & Shipley, patent head.
15x6 Flather, compound rest, power cross feed.
16x6 Draper, compound rest, power cross feed.
16x8 Willetts, compound rest, power cross feed.
18x6 Flather, compound rest, power cross feed, taper.
18x10 Perkins, compound rest, power cross feed.
20x8 Fay & Scott, compound rest, power cross feed.
22x12 Gleason, compound rest, power cross feed.
24x12 Fifield, compound rest, power cross feed.
26x14 Perkins, compound rest, power cross feed.
28x2 plain rest.

28x10 Gleason, compound rest, power cross feed.
30x10 Putnam, compound rest, power cross feed.
31x10 Gould & Eberhardt, compound rest, power cross feed.
36x16 Reed, compound rest, power cross feed.
36x16 Niles, compound rest, power cross feed.
36x17 Bement, triple geared, compound rest.
37x18 Sellers, compound rest, power cross feed.
38x14 New Haven, compound rest power cross feed.
38x20 Fay & Scott, compound rest, power cross feed.
42x26 American, triple geared.
84x20 compound rest, power cross feed.
103x35 Bement, triple geared.

MILLERS.

No. 1 Pratt & Whitney, plain.
No. 2 Brown & Sharpe, vertical.
No. 3 Cincinnati, plain.
No. 5 Brown & Sharpe, plain.

No. 13 Brown & Sharpe, plain.
No. 15 Garvin, plain.
No. 24 Brown & Sharpe, plain.
No. 1 Cooper Bros. die sinker.

DRILLS.

16 in. style F, Baker Bros.
21 in. Snyder, back geared & power feed.
25 in. Prentice Bros., back geared.
Baker Bros. high speed.
38 in. New Haven, sliding head.

60 in. Bickford, stationary head.
5 ft. Bickford, universal radial.
5 1/2 ft. Niles, universal radial.
2 spindle Fox, sensitive.
No. 1 Barnes horizontal.

SHAPERS.

15 in. Pratt & Whitney
24 in. Gould & Eberhardt.

18 in. Putnam, friction.
26 in. Lodge & Davis, shifting belt.

GEAR CUTTERS.

12 in. Gould & Eberhardt, hand.
16 in. Gould & Eberhardt, auto.

18 in. Brown & Sharpe, automatic.
26 in. Brown & Sharpe, automatic.

AUTOMATIC SCREW MACHINES

4 in. No. 52 National-Acme.

4 in. "K" Hartford.

PLANERS.

16x16x4 Hendey, 1 head.
24x24x5 American.
24x24x5 Gould & Eberhardt.
30x30x6 Pond, 1 head.
30x30x8 Cincinnati, 1 head.

32x32x8 Pease, 1 head.
33x33x8 Betts, 1 head.
48x48x16 Sellers, two heads.
54x48x16 Pond, four heads.
81x54x16 Betts, 1 head.

HAMMERS.

50 lb. Bradley, compact.

800 lb. Farrell, board drop.

MISCELLANEOUS.

Cold saw, 24 in. Newton.
Cold Saw, No. 21 Higley.
Engine, gas, 8 h. p., Fairbanks.
Engine, steam, 8x10 in. Ide.
Gear cutter, 60 in. x 12 ft. Gould & Eberhardt.
Grinder, universal, No. 2 Landis.
Keyseater, No. 1 Davis.

Pipe machine, 2 in. Bignall & Keeler.
Pipe machine, 3 in. Jarecki.
Profiler, 1 spindle, Garvin.
Screw machine, 1 1/2 in. Spencer, automatic, double end.
Slotter, 13 in. Bement.
Slotter, 16 in. Bement, crank.

SECOND-HAND MACHINERY

FOR SALE BY

New Haven Manufacturing Co., - - - New Haven, Conn.

PLANERS.

34 in. square x10 ft., double heads, new (2).

46x36 in. x10 ft., double heads, rebuilt, practically good as new; immediate delivery.

FOR SALE BY

The Motch & Merryweather Machinery Company,
707-715 Lakeside Av., N. W., - - - Cleveland, Ohio

Branches: Detroit, Cincinnati, Pittsburg.

Refitted Machine Tools.

CENTERING MACHINE.

5 in. Whiton, 2 spindle.

Dallet, portable (2).

Quint, 6 spindle, turret.

4 ft. Box, half universal.

33x9 in. x 4 p, Gould & Eberhardt.

No. 1 Cincinnati, cutter, complete.

No. 1 Leland & Faulconer, wet tool.

No. 2 Leland & Faulconer, wet tool.

Yankee A. drill grinder.

60 lb. Bradly, cushion helve.

24x2 in. Morton.

13x6 Bullard, with turret.

14x8 Flather, 4 step cone, elev. rest.

16x6 Prentice, 4 step cone, double back geared, compound rest.

16x8 Greaves & Klusman, compound rest, taper attachment.

18x10 Porter, compound rest.

20x8 Flather, 4 step cone, belt fd. c. r.

No. 3 Diamond.

No. 2 1/2 Garvin, plain.

10 in. Busch, crank, with swivel vise.

20x20x4 Wheeler, 1 head.

24x24x6 Whitcomb, 1 head.

No. 62 Toledo, triple geared.

15 in. Hendey.

15 in. Smith & Mills, single geared crank.

16 in. Steptoe, crank.

16 in. Gould & Eberhardt, crank.

20 in. Hendey, friction.

22 in. Universal, chuck fitted.

24 in. Lodge & Shipley screw mach.

28 in. Gisholt, rapid traverse.

Belt lacer, 16 in. Peerless.

Gap riveter, 10x36 in. Chicago, pneumatic.

UPRIGHT DRILL PRESSES.

26 in. Prentice, sliding head.

33 in. Bement-Miles.

RADIAL DRILLS.

4 ft. 6 in. Pond, heavy.

GEAR CUTTERS.

GRINDERS.

Yankee PO. drill grinder.

No. 11 Brown & Sharpe, (2).

No. 4 Landis universal.

No. 24 Landis plain.

HAMMERS.

KEYSEATERS.

ENGINE LATHES.

22x15 Pond, compound rest.

22x12 Lathe & Morse, 4 step cone, belt feed, compound rest.

20x8 Flather, 5 step cone, belt feed, compound rest.

24x12 Lodge & Shipley, 5 step cone, compound rest, quick change.

48x20 Johnson, triple gd., massive.

POLISHING LATHES.

MILLING MACHINES.

PLANERS.

27x5 New Haven, 1 head, (2).

30x10 Detrick & Harvey, open side.

PRESSES.

P-4. Ferracute.

SHAPERS.

30 in. Kelly, crank.

24 in. Ohio, shifting belt.

26 in. Cincinnati, shifting belt.

28 in. Hendey, friction.

32 in. Gould & Eberhardt, extension base.

TURRET LATHES.

44 in. Grant chucking lathe.

No. 22 Prentice full automatic chucking lathe.

MISCELLANEOUS.

Nut tapper, 1 1/2 in. Acme, 6 spindle.

Punch, pneumatic, No. 1 Caskey.

Punch, 8 in. Badger "G."

C.C. Worn

Sgl. end ber

No. 6 Bloun

No. 6 Bloun

No. 7 Bloun

No. 3 Bloun

48 in. automa

Wet emery s

No. 6 1/2 Diam

Rod grinder

No. 3 Ruby

No. 26 Hunt

ble end.

Roots rotary

21 in. hearth

7 in. outlet S

40 in. dia ve

No. 32 Buffa

18 in. hearth

No. 6 Mitts

No. 6 Mitts

10 in. Baker,

2 in. Besly,

Ferry auto, n

No. A Burke

Chain block

2-spindle Gar

Riveter, 2-16

Hand chain t

No. 1 Stewar

Gas furnace

Air drill, No.

Air hoist, 7 1/2

Anvil, 107 lb.

Anvil, 125 lb.

Balancing wa

Beader on co

Belting, leath

Blacksmith b

Boring mill, 9

Centering mac

Chucks, all siz

Cleaner, No. 2

Cold saw, No.

Comice brake

Countershafts

Crank turning

Crimper, No.

Cutter grinder

Cutting-off ma

Druid g hd. &

Drilling head

File and hack

Fire extinguish

Former & beac

Friction clutch

SECOND-HAND MACHINERY

FOR SALE BY

C.C. Wormer Mach'ry Co., 94-96 W. Woodbridge St., Detroit, Mich.

POLISHING AND BUFFING MACHINERY

Sgl. end bench polisher.	4 in. spdl. sgl. end bench polisher.
No. 6 Blount, overhanging arm, new.	No. 5 Blount buffer, new.
No. 6 Blount buffer, new.	14 in. Middleditch polisher, new.
No. 7 Blount buffer, on col., new.	No. 1 Blount combination, new.
No. 3 Blount combination, new.	Belt strapping attach., Blount, new.

GRINDING MACHINERY

48 in. automatic knife grinder.	32 in. Union knife grinder.
Wet emery grinder, 32 in. wheel.	No. 2 Diamond wet tool grinder.
No. 6 Diamond wet emery.	No. 1 Diamond bench wet grinder.
Rod grinder, 34 in. centers.	No. B Challenge dbl. end, emery.
No. 3 Ruby bench emery.	No. 5 Diamond, dbl. end on col.
No. 26 Huntington suspended, double end.	No. 0 Buckeye twist drill grinder, new.

FORGES, BLOWERS, FANS

Roots rotary hand blower.	60 in. Fuller disc ventilator.
21 in. hearth forge.	No. P-2 Canedy blower.
7 in. outlet Sturtevant blower.	21 in. Hugatt forge blower.
40 in. disc ventilator.	No. 6 Roots hor. cupola blower.
No. 32 Buffalo blast forge.	No. 2 Sturtevant volume blower.
18 in. hearth Silver forge, new.	18 in. hearth Champion forge, new.

KEYSEATERS

No. 0 Mitts & Merrill, 7 in. stroke.	12 in. Morton. crank motion.
No. 0 Mitts & Merrill, variable st.	No. 1 Davis, 4 in. stroke.

TAPPING MACHINES

10 in. Baker, style K-11.	4 in. Besly, bench.
4 in. Besly, bench.	4 in. bench tapper.
Ferry auto, nut tapper, 4 in.	1 in. Ohio hand nut tapper.
No. A Burke, bench, new.	No. D Burke, bench, new.

CHAIN MACHINERY

Chain block reamer, 0 in. to 4 in.	Chain rivet spinner, 2 spindle.
2-spindle Garvin stud machine.	Automatic chain stud machine.
Riveter, 2-16 in. Shuster.	Hand chain stretcher.
Hand chain testing machine.	Hollow rivet setter.

FURNACES

No. 1 Stewart oven muffle, new.	Stewart comb. furnace & blower.
Gas furnace for soldering.	No. 6 American, soft metal.

MISCELLANY

Air drill, No. 3 Little Giant.	Gear cutting attachment for lathe.
Air hoist, 7 1/2 in. x 2 ft. stroke.	Gear hobber, No. 1 Farwell, new.
Anvil, 107 lb. Horn.	Hangers, 10 to 24 in. drop, miscellany.
Anvil, 125 lb., steel faced.	Lock seamer, Erdman & Kerchres.
Balancing ways, No. 2 Bowsher.	Magnetic separator, Sawyer.
Reader on col., power.	Machine heads for valve miller.
Belting, leather, 2 to 8 in. wide	Pinion cutter, No 1 Slate, auto.
Blacksmith bellows: 3 to 6 in. vises.	Plating tank, 26x26x19 in.
Boring mill, 9 ft. Sellers.	Plating plant equip., miscellany lot.
Centering machine, Slocomb.	Pulleys, wood split, 3 to 64 in.
Chucks, all sizes, lathe and drill.	Safe, 30x36x26 Barnes.
Cleaner, No. 27 Clipper.	Scale, 30,000 lb., hopper, Fairbanks.
Cold saw, No. 11 Higley.	Shafting, 1 3/4-16 in. to 2 15-16 in.
Comice brake, 8 ft. Ohl.	Slide rest for speed lathe.
Countershafts, all sizes.	Soldering machine, 8 ft. long.
Crank turning machine, 7 in. cap.	Tire upsetters, Ideal and Detroit.
Crimper, No. 1 Bliss, double head.	Tire shrinker, No. 1 Wylie & R.
Cutter grinder, Pratt & Whitney.	Tire benders (3).
Cutting-off mach., 4 in. Hurlbut & R.	Tire welder and shear, No. 4 L. & A.
Divid'g hd. & tailst'k, 10 in. Garvin.	Tube cutter on column.
Drilling head, No. 4 Stowe.	Tube cutter, roller, 3 in. disc.
File and hack saw, Simplex, bench.	Tumbling barrel, wood frame.
Fire extinguisher, Standard.	Turret attachment, 4 spindles.
Former & beader, No. 2 Bliss bench.	Valve miller, 6 spindle.
Friction clutch, 36x16x3 7-16 in.	Worm cutting mch., Kal. auto.

SECOND-HAND MACHINERY

FOR SALE BY

Frank Toomey, Inc., - **127 N. Third St., Philadelphia, Pa.**

MILLING MACHINES.

- | | |
|--------------------------------------|------------------------------------|
| No. 2 Cincinnati, universal. | No. 2 Brown & Sharpe, plain (3). |
| No. 1 Brown & Sharpe, plain. | 36 in. x 12 ft. heavy slab miller. |
| No. 1 Brown & Sharpe, universal (2). | |

BORING MILLS.

- | | |
|-----------------------------|-------------------------|
| 50 in. Bement, double head. | 10 ft. Betts, vertical. |
|-----------------------------|-------------------------|

HAMMERS AND RADIAL DRILLS.

- | | |
|--------------------------------|-------------------------|
| 1500 lbs. Bement & Miles d. f. | 250 lbs. Morgan s. f. |
| 750 lbs. Bement & Miles d. f. | 42 in. Bickford radial. |
| 1000 lbs. Chambersburg, drop. | 36 in. Morris radial. |

MISCELLANEOUS.

- | | |
|-----------------------|---------------------------------|
| Planer, 26x26x8 Pond. | Pulley lathe, 60 in. New Haven. |
|-----------------------|---------------------------------|

FOR SALE BY

Joseph T. Ryerson & Son, - **16th and Rockwell Sts., Chicago**

The following machinery, comprising the equipment of several plants which we recently purchased complete, is offered for quick sale. Many of the tools are practically new and afford an excellent opportunity to save money and time. All offered subject to prior sale.

PLANERS.

- | Item. | Item. |
|----------------------------------------|---------------------------------------------|
| 136 Sellers, 48x48x8 ft. 1 in., 2 hds. | 167 Sellers, 42x42x6 ft. 6 in., 2 hds. |
| 157 Pond, 26x26x6, heavy pattern. | 168 Sellers, 42x42x6 ft. 6 in., 2 hds. |
| 161 Pond, 26x26x6, heavy pattern. | 169 Sellers, 42x42x8 ft. 6 in., 2 hds. |
| 163 Sellers, 36x36x7, 1 head. | 215 Gray, 36x36x10, 2 heads, motor drive. |
| 164 Sellers, 36x36x7, 1 head. | 216 Dieterick & Harvey, 60x60x11 open side. |
| 165 Sellers, 36x36x7, 1 head. | |
| 166 Bement, 36x36x7, 2 heads. | |

MILLING MACHINES.

- | | |
|-------------------------------------------------------------|--------------------------------|
| 90 27 in. Bausch & Harris vertical boring and turning mill. | 202 No. 9 Garvin, back geared. |
| 201 No. 9 Garvin, back geared. | 203 No. 9 Garvin, back geared. |

PUNCHES AND SHEARS.

- | | |
|------------------------------------------------------------------------------------------------------------------------------|--|
| 75 Hilles & Jones No. 2 flat jaw, capacity 1 in. $\frac{1}{4}$ in.; 36 in. throat, with 8 ft. crane and trolley, belt drive. | |
| 222 Henry Pels portable beam shear. | |
| 59 Pels & Co., Johns T-30 beam shear, cap. 12 in. 35 lb. beams, belt drive. | |
| 231 Lennox No. 2 bevel shear, capacity $\frac{1}{4}$ in. material, belt drive. | |

DRILLS.

- | | |
|-------------------------------------------------------------------------------------------------------|--|
| 193 Drill press, sensitive, 3 spindle Foote-Burt, automatic feed. | |
| 195 Drill press, sensitive, 3 spindle Barr, distance between center of spindle 9 in., table 11x32 in. | |
| 198 Drill press, sensitive, 4 spindle Sigourney, table 12x24 in. | |

MOTORS.

- | | |
|---------------------------------------------------|------------------------------------------------|
| 1-A 25 h. p. West, 220 volts, d. c., 850 r. p. m. | 38 15 h. p. Schureman & Hayden. |
| 2-A 15 h. p. West, 220 volts, d. c., 560 r. p. m. | 40 6 h. p. West, crane motor, 220 volts, d. c. |

MISCELLANEOUS.

- | | |
|------------------------------------------------------------------------------------------------|--|
| 230 Boiler riveter, Allen pneumatic, 96 in. reach, capacity $1\frac{1}{2}$ in. rivets. | |
| 213 Boring mill, horizontal, 4x27x60 Beaman & Smith. | |
| 177 Bulldozer, Ajax No. 5, double geared, belt drive, weight 21,000 lbs. | |
| 145 Lathe, 15 $\frac{1}{2}$ in. x 6 ft. Flathead. | |
| 63 Pipe threader, Bignall & Keeler, P. D. Q. C. No. 2, $\frac{1}{4}$ to 2 in. pipe. | |
| 192 Pipe threading and cutting machine, Borden, 2 in., capac. $\frac{1}{4}$ to 2 in. pipe. | |
| 206 Profiling machine, No. 2 Pratt & Whitney, table 12x15 in., vertical movement of head 3 in. | |
| 193 Shaper, Springfield, 15 in. | |
| 244 Stake riveter, Hilles & Jones 60 in., motor drive. | |

A. H. E.

Boring mill
Drill, 30 in.
Grinder, u
The abo
workmen,
or as a wh

The E. L.

3 spindle B
4 spindle 1
gang, po
4 spindle N
6 spindle N
28 in. Ham
geared, p

27 in. Strei
27 in. Baus

1x6 Spring
1x7 Blaisd
1x6 Muller
1x6 Reed.
1x6 Lodge
gear,
1x6 Walco
gear, near

14 in. Monit
15x5 B. & O
No. 21 Garv
12-16 in. h

Air compres
belt driver
minute.
Bench folder
Bolt cutter,
Landis h
Bolt cutter,
Bolt pointer,
Brake, No. 2
Buffing lath
110 volts, d
Grinder, No
wheel face.
Grinder, 20x
wheel, wet.
Keyseater, 18
Miller, hand
Mills, No.
Motor, 10 h
230 v., d. c.
switch.
Pipe mche., 4
Planer, 22x22
Planer, 26x26
A partial li
list of new an

SECOND-HAND MACHINERY

FOR SALE BY

A. H. Eddy,

Windsor, Conn.

Boring mill, turret, 30 in. Bullard.

Drill, 30 in. Prentiss, with clutch counter for forward and reverse.

Grinder, universal, No. 2 Brown & Sharpe, all fixtures.

The above tools have been used a short time to build a model by high grade workmen, are in as perfect order as when bought of makers. Will sell singly or as a whole to highest bidder by July 1st.

FOR SALE BY

The E. L. Essley Mch'y Co., 555-557 Washington Blvd., Chicago, Ill.

DRILLS.

3 spindle Burnham, sensitive, $\frac{1}{2}$ cap.
4 spindle 18 in. W. F. & J. Barnes,
gang, power feed, automatic stop.
4 spindle No. 3 Garvin, multiple.
6 spindle No. 3 Garvin, multiple.
28 in. Hamilton, sliding head, back
geared, power feed.

Baker Bros. upright high speed drill
presses, complete, nearly new, (2).
22 in. Bickford, sliding head, over-
hauled.
28 in. Moline, sliding head upright,
nearly new.

BORING MILLS.

37 in. Streit pulley boring machine
37 in. Baush & H., 2 heads, pl. table.

Hoefler, horizontal boring, drilling
and milling machine, wt. 3,000 lbs.

ENGINE LATHES.

14x6 Springfield, pl. rest, $\frac{3}{4}$ in. hole.
14x7 Blaisdell, taper attachment.
18x8 Muller, hollow spindle, p. c. f.
18x6 Reed.
18x6 Lodge & Shipley, quick change
gear.
16x6 Walcott & Wood, quick change
gear, nearly new.

16x8 LeBlond, pl. rest, $\frac{1}{4}$ in. hole.
18x8 Le Blond, fine condition.
18x8 Lodge & Davis, compound rest.
21x10 Draper, hollow spindle, p. c. f.
24x12 Walcott, nearly new.
32x18 New Haven, compound rest.
36x14 Pratt & Whitney, solid spndl.
36x25 New Haven, c. r., fine order.

MISCELLANEOUS LATHES.

14 in. Monitor, plain head.
14x3 B. & O., Monitor, back geared.
No. 21 Garvin, plain head, Monitor,
12-16 in. hollow spindle.

16 in. Monitor, plain head.
24 in. Davis chucking, set over turret.
28 in. Gisholt, standard turret, comp.
2x24 in. Jones & L., flat turret.

MISCELLANEOUS.

Air compressor, 13x8x12 in. Curtis,
belt driven, cap. 161 cubic ft. per
minute.
Bench folder, 30 in.
Bolt cutter, $\frac{1}{4}$ in. Adams, single
Landis head.
Bolt cutter, 2 in. Bement, single.
Bolt pointer, 1 in. Adams.
Brake, No. 2C Dries & K., 7 ft. 14 ga.
Buffing lathe, 2 h. p. motor drive,
110 volts, d. c.
Grinder, No. 1 Diamond, double,
wheel face.
Grinder, 20x3 in. Diamond, single
wheel, wet.
Keyseater, 18 in. No. 4 Morton, rebuilt
Miller, hand, No. 2 Fox.
Millers, No. 4 Garvin, plain (2).
Motor, 10 h. p. Crocker-Wheeler
220 v., d. c., with starting box and
switch.
Pipe mche., 4 in. Borden, complete.
Planer, 22x22x6 Putnam, very heavy.
Planer, 26x26x6 New Haven, 1 head.

Planer, 36x36x8 Betts, 1 head.
Planer, 56x45 in. x 25 ft. Betts, gear
driven, 2 hds., good condition.
Profiler, Ames, 2 spindle, fine order.
Punch press, 3 in. stroke, No. 3 Koh-
ler, o. b., inclinable.
Punch press, combination gear and
fly wheel, Crosby, 3,000 lbs.
Punching press, No. P-2 Ferracute,
solid back, 2,200 lbs., splendid order.
Rivet spinner, $\frac{1}{2}$ in. National.
Saws, No. 4 Keystone, cold, $\frac{1}{4}$ in.
Screw machine, 2 in. Standard Cleve-
land automatic, 5 hole turret.
Shaper, 17 in., gear driven, good con-
dition, cheap.
Square shear, 30 in. Niagara, foot.
Tempering furnace, oil, 16 in. diam.,
complete with thermometer.
Threading mche., roll, Rudolphi & K.
Turret lathe, 13 in. No. 6 Gisholt,
standard, complete equipment for
bar work, second hand, nearly new.

A partial list of used machinery for quick delivery. Write for our complete list of new and used machinery, and state your wants; we may have it.

SECOND-HAND MACHINERY

FOR SALE BY

W. L. Perkins Jr. & Co., 136 Liberty St., - New York City, N. Y.

LATHES.

12x4 automatic thread cutting.
18x5 Reed stud lathe.
20x8 Bement, c. r., p. c. f.
20x10 Harrington, c. r., p. c. f.
25x10 Fitchburg, c. r., p. c. f.
26x12 Blaisdell, c. r., p. c. f.

30x14 Bement, c. r., p. c. f.
32x14 Harrington, c. r., p. c. f.
80 in. Bement, driving wheel.
88 in. Niles, driving wheel.
13 in. Bardons & Oliver, turret.
18 in. American, brass turret.

DRILLS.

30 in. Aurora, b. g. & p. f.
32 in. Pond, b. g. & p. f.
36 in. Gould & Eberhardt, b. g. & p. f.
40 in. Prentice, b. g. & p. f.

4 ft. Bement semi-radial.
5 ft. Baush plain radial.
6 ft. Niles plain radial.
8 ft. Bement half universal.

PLANERS.

24x20 in. x8 ft. Pond.
25x25 in. x5 ft. 9 in. Sellers.
26x26 in. x6 ft. Putnam.

36x36 in. x10 ft. Bement, 2 heads.
36x36 in. x30 ft. Pond, 4 heads.
46x46 in. x7 ft. 4 in. Sellers.

MISCELLANEOUS.

Miller, slab, 24 in. x8 ft. Bement-M.
Miller, slab, 34 in. x11 ft. Newton.
Punch, No. 4 Long & Allstatter.

Shear, No. 5 Long & Allstatter.
Slotter, 10 in. Sellers.
Slotter, 12 in. Sellers.

FOR SALE BY

Wickes Brothers,

West & Cedar Sts., New York City.

LATHES.

42 in. Pond, wheel and axle.
36x16 Pond.
30x11 ft. 6 in. Wood & Light.
26x9 Sherman, screw cutting.
24x8 ft. 4 in. Putnam.
21x20 Wright, screw cutting.
20x8 Pratt & Whitney.
18x4 Gray, turret.
16x6 LeBlond, hollow spindle.
16x8 ft. 8 in. Fox lathe.
16x5 Jones & Lamson, turret.
15x8 Phoenix, screw cutting.

16x5 Prentice, hollow spindle.
15x6 Blaisdell, hollow spindle.
15x5 Lodge & Davis, turret.
15x5 Draper, hollow spindle.
15x6 Jones & Lamson, hollow spindle.
15x6 Sebastian, hollow spindle.
13x5 Lathe & Morse, hollow spindle.
13x6 Ames, screw cutting.
12x5 Young, hollow spindle.
12x4 Lodge & Davis, turret.
12x4 automatic threading, hol. spindle.
36 in. pulley lathes, (2).

SHAPERS.

18 in. Ohio, geared, new.
15 in. Industrial, traverse.
14 in. traverse.

12 in. back geared.
10 in. Fitchburg.
8 in. Bement, crank.

DRILLS, PLAIN

48 in. Putnam upright back geared.
27 in. post or wall drills (6).
21 in. Robertson, bk. gd., upright, new (2).
18 in. upright drill.
15 in. post drill.
14 in. Henry & Wright, sensitive.
10 in. post drill.
4 spindle Western, upright.

AND RADIAL

6 spindle gang.
No. 3 Garvin, four spindle, (3).
6 ft. Niles plain radial.
5 ft. Niles plain radial.
4 ft. Universal plain radial.
48 in. plain radial.
42 in. Baush combined radial and vertical.

SCREW MACHINES

16 in. x5 ft. Jones & Lamson, turret.
4 in. Cleveland automatic turret.

4 in. Cleveland automatic turret.

PLANERS

66x60x30 Bement, 3 heads.
66x61x25 ft. 8 in. Bement, 3 heads.
42x35x7 Bement, double head.
34x35x10 Pratt & Whitney.

30x25x6 ft. 9 in. Fitchburg.
24x24x7 Aldrich & Calvert.
22x22x5 Putnam.
15x11x22 in., crank.

210-21

16x6 Fitchburg
23x26 Niles

22 in. shaper
24 in. Cincinnati
26 in. Bement

24 in. Goulet
26x26x6

7 in. thruster
18 in. thruster

Bending
diameter
Bending
Column
Grinder,
Keyway
Pipe machine

A. D. W.

9x42 in. S
14x6 Putnam
16x6 Flat
16x6 Shel

No. 00 B
turret for
in. Cleveland
in. Pratt
in. Cleveland

6 spindle
20 in. Med
24 in. Bar
28 in. Cincinnati

No. 2 Bro
No. 2 Fox
No. 2 Gar

16 in. Gou
16 in. Smith
10 in. Step

We offer
Has been
as good as

Hammer,
Hammer,
Hammer,
Morgan,
Our latest
drop us a p

SECOND-HAND MACHINERY

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

210-212 Washington Ave.

St. Louis, Mo.

LATHES.

16x6 Fitchburg.
25x36 New Haven.

24x12 New Haven.

DRILLS.

22 in. sliding head.
24 in. Cincinnati, with tapping att.
28 in. Barnes.

30 m. Lodge & Davis.
5 ft. plain radial.
6 spindle Quint.

PLANERS AND SHAPERS.

24 in. Gould & Eberhardt shaper.
25x36x6 New Haven planer.

30x30x8 Whitcomb planer.
36x36x12 New Haven planer, cheap.

PUNCHES AND SHEARS

7 in. throat No. 6 Queen City punch.
18 in. throat No. 5 Long & A. punch.

15 in. throat Rapid punch, $\frac{1}{2}$ in $\frac{1}{2}$ in.
48 in. throat heavy splitting shear.

MISCELLANEOUS.

Bending rolls, 8 ft., drop end, 7 in. diameter.
Bending rolls, 8 ft., 10 in. diameter.
Column facing lathe, double head.
Grinder, architectural iron.
Keyway cutter, No. 6 Morton.
Pipe machine, 12 in. Bignall & Keeler.

Straightening rolls, 60 in. Hilles & Jones.
Hammer, 90 lb. Justice.
Press, No. C-2 Ferracute.
Arbor press, No. 24 Greenerd.
Miller, No. 3 Kemp Smith, hand.

FOR SALE BY

A. D. White Machinery Co., 108-114 N. Jefferson St., Chicago.

LATHES.

9x42 in. Shepard, hollow spindle.
14x6 Putnam, r. & f., cheap.
16x6 Flather, comp. rest & h. s.
16x6 Shellenbach, comp. rest & h. s.

16x32x16 Fay & Scott, ex. gap.
20x12 Flather, comp. rest & h. s.
28x25 Putnam engine lathe.
20x10 Powell, compound rest.

SCREW MACHINES AND TURRET LATHES.

No. 00 Brown & Sharpe, automatic, turret forming (2).
3 in. Cleveland, automatic.
3 in. Pratt & Whitney, automatic (5).
3 in. Cleveland, automatic.

1 in. Costillo, hand.
2 in. American, a. c. & w. f.
2 in. Cleveland, automatic.
18 in. Davis & Egan, 24 in. h. s.
16 in. Windsor, raised to 24 in.

DRILLS AND BORING MACHINES.

6 spindle Fox, sensitive drill.
20 in. Mechanics friction drill.
28 in. Barnes, p. f. & b. g.
23 in. Cincinnati, p. f. & b. g.

42 in. Niles mill, 2 heads, new.
4 ft. Niles radial, semi-universal.
10 ft. Niles boring mill, 2 heads.

MILLING MACHINES AND GEAR CUTTERS.

No. 2 Brown & Sharpe, universal.
No. 2 Fox, plain.
No. 2 Garvin, Lincoln.

No. 5 Becker vertical miller.
30 in. G. & E., automatic.
36 in. Fellows, gear shaper.

PLANERS AND SHAPERS.

16 in. Gould & Eberhardt, b. g.
16 in. Smith & Mills, geared.
16 in. Steptoe, plain crank.

30x30x10 Detrick & H., o. s.
30x30x14 American, 2 heads.
98x98x20 Betts, 1 head.

GAS ENGINE.

We offer for quick sale one 20 h. p. Columbus Gas Engine, with muffler. Has been used but a very short time and is in excellent condition, practically as good as new. Spot cash, \$250. If you need an engine, get in on this quick!

MISCELLANEOUS.

Hammer, power, 50 lb. Fairbanks.
Hammer, helve, 60 lb. Bradley.
Hammer, steam, double frame, 650 lb.
Morgan & Williams.

Hammer, steam, single frame, 2,000 lb. Monighan.
Keyseater, No. 6 Mitts & Merrill.
Press, toggle, No. 14 Bliss.

Our latest "Yellow Book" is ready. drop us a postal card.

You can have it regularly if you'll

SECOND-HAND MACHINERY

FOR SALE BY

McCabe Machine Co.,

P. A. McCabe, Pres.,

95 Liberty St., New York, N. Y.

BORING MILLS.

42 in. Bullard, double head, with turret, good.
Betts horizontal, 6 ft. table, power lift, near new.

RADIAL DRILL.

4 ft. American, triple geared, high speed, near new.

GEAR CUTTER.

24 in. Becker-Brainard, automatic, near new.

LATHES.

18 in. x 8 ft. Lodge & Shipley, high speed, good.
18 in. x 8 ft. Fitchburg, heavy pattern, good.
32 in. x 12 ft. Fitchburg heavy pattern, good.

PLANER.

28 in. x 10 ft. Gray, double head, good.

TURRET LATHES.

2x24 in. Jones & Lamson, tool equipment, good.
Potter & Johnston, 2 in. hole, power cross feed, near new.
Bullard, 3½ in. hole, triple geared, extra heavy, good.

SLOTTER.

Sellers, 12 in. stroke, all feeds, good.

"Near new" indicates condition practically good as new.
"Good" indicates condition not quite "near new."

FOR SALE BY

J. W. Wright & Co.,

2nd and Morgan Sts., St. Louis, Mo.

LATHES.

18x10 Mueller, plain rest.	30x12 Gray, compound rest.
18x10 Bradford, compound rest.	28x12 Fifield, compound rest.
19x10 Gray, compound rest.	20x12 Reed, compound rest.
19x12 Gray, compound rest.	42x13, compound rest.

PLANERS AND SHAPERS.

15x15x36 in. New Haven.	24 in. Steptoe, triple geared.
24x24 in. x 8 ft. Pease, 2 heads.	

PRESSES.

C-2 Ferracute, power.	No. 51 Swaine, power (3).
C-4 Ferracute, power.	Small presses, power (2).
No. 33 Swaine, power.	No. 3 Swaine, foot (7).
No. 35 Swaine, power (3).	

SCREW MACHINES.

No. 5½ Bardons & Oliver, 2½ in. capacity, A-1.

DRILLS.

28 in. Sibley, back gear, power feed.	3½ ft. Fosdick, radial.
34 in. upright, back geared, power fd.	4 ft. Gang, radial.

MOTORS.

5 h. p. Wagner, a. c., 220 v., 60c., single phase.	10 h. p. Fairbanks, a. c., 220v., 60c., 3p.
5 h. p. Ft. Wayne, a. c., 220v., 60c., 3p.	20 h. p. Ft. Wayne, a. c., 220v., 60c., 3p.
5 h. p. Fairbanks, a. c., 220 v., 60c., 3p.	25 h. p., d. c., 500 v.
	50 light dynamo.

MISCELLANEOUS.

Blower, No. 2 Roots.	Floor grinder, No. 2 Safety.
Holt cutter, 1½ in. National, double.	Gear cutter, Standard, automatic.
Boring mche., cylinder, No. 1 Barrett.	Hack saw, power.
Cock grinder.	Hammer, power, No. 4 Perfect.
Compressor, 22x26½x24 in., Ingersoll, straight line.	Pipe and tube cutter, No. 2 Fox.
Cutter grinder, No. 3 Brown & S.	Punch and shear, combination, Old.
	Vise, No. 5-F., B. & S.

New York

15x8 Am
16x6 Fla
18x14 Sch
22x12 Pro
22x16 Lo
27x15 P.

7x14 Pott
14x4 Prat
16x6 Prat
17x6 P. &
28x7 Bull

24x24x6 P
36x36x8 Se
36x36x14 S
36x36x17 S
72x62x28 H

Plate shea
Plate shea
No. 1 A & M
No. 2 Stile
No. 4 Rudo

The Chicago

Boilers, fire
Boiler, fire
Boiler, inter
Boilers, but
lbs., (4).
Boilers, but
lbs. (6).
Boilers, lap
78x30, 115
Boilers, lap
72x28, 100
Boring mill
Drill press,
Drill press,
Drill press, 20
Drill press, 4
Drill press, 4
Gasoline eng
Edmonds,
Gasoline eng
Edmonds,
Jaw crusher,
Locomotives,
gauge, (2).

We have li
thoroughly o
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SECOND-HAND MACHINERY

FOR SALE BY

New York Machinery Exchange, - 50 Church St., New York City.

LATHES

13x8 American, hollow spindle.	27x21 Pond.
16x8 Flather, hollow spindle.	30x19 Lodge & Shipley, hollow spindle, quick change gear.
18x14 Schumacher-Boye, h. s.	36x22 Sellers, triple geared.
22x12 Prentiss Bros., h. s.	42x16 Niles, taper attachment.
22x16 Lodge & Shipley, h. s., q. c. g.	
27x15 P. & W., h. s., taper attach.	

TURRET LATHES.

7x14 Potter & Johnston, auto., (2).	24 in. Davis, chucking and forming.
14x4 Pratt & Whitney.	20x10 Windsor, turret on shear.
16x6 Pratt & Whitney.	26x10 Bullard, triple geared.
17x6 P. & W., face plate drive.	36x8 Bullard, hexagon turret.
20x7 Bullard.	Lo-Swing forming lathe, Fitchburg.

PLANERS.

24x24x6 Pease, 1 head.	72x72x20 Bement, 4 heads.
36x36x8 Sellers, 2 heads.	84x84x22 Putnam, 1 head.
36x36x14 Sellers, 2 heads.	96x96x22 Betts, 1 head.
36x36x17 Sellers, 2 heads.	16 ft. Hilles & Jones, plate.
72x62x28 Bement, 2 heads.	20 ft. Hilles & Jones, plate.

SHEARS AND PRESSES.

Plate shear, 22 in. throat.	No. 75 Bliss, punching.
Plate shear, 26 in. throat.	Geared punch, 26 in. opening. Buffalo.
No. 1 A & New Doty, punch & shear.	Geared press, 20,000 lb. Moore.
No. 2 Stiles & Parker, punch.	Raxendale, inclinable.
No. 4 Rudolphi & K., inclinable.	Presses, bench power (6).

FOR SALE BY

The Chicago House Wrecking Co., W. 35th and Iron Sts., Chicago.

MISCELLANEOUS.

Boilers, fire box, 70 h. p. Economic, (2).	Mortiser and borer, hor. Greenlee.
Boiler, fire box, 60 h. p. Economic.	Punch and shear, combination, Doty.
Boiler, internally fired, 40 h. p. Atlas.	Pump, duplex, 14x8x10 Laidlaw-Dunn & Gordon.
Boilers, butt strap, 72 in. x 18 ft., 130 lbs., (4).	Pump, duplex, 12x7x12 Smith-Vaile.
Boilers, butt strap, 66 in. x 16 ft. 125 lbs., (6).	Pump, duplex, 10x6x10 Dean.
Boilers, lap joint, triple riveted, 78x20, 115 lbs., (4).	Pumps, duplex, 6x4x6 Dean, new, (5).
Boilers, lap joint, quadruple riveted, 72x20, 100 lbs., (12).	Pumps, duplex, 4x2x4 Dean, new, (12).
Boring mill, 8 ft. Niles, single head.	Pumps, duplex, 3x2x3 Dean, new (7).
Drill press, 36 in. Prentiss, bk. gd.	Resaw, band, 44 in. McDonough.
Drill press, 30 in. Prentiss, bk. gd.	Shaper, 24 in. Wetherill, crank.
Drill press, 20 in. Silvers, bk. gd., new.	Belting, 500,000 feet of bargains in brand new and used leather, rubber and canvas belting, all sizes and widths, at prices that mean a positive saving of 50 to 75 per cent. Send for complete belt list No. 78.
Drill press, 4 1/2 ft. Gang, plain radial.	Steel tanks:
Drill press, 4 1/2 ft. Universal, pl. radial.	1000 gallon capacity (12).
Gasoline engine, 20 h. p. Bates & Edmonds, new.	1500 gallon capacity (42).
Gasoline engine, 8 h. p. Bates & Edmonds.	3000 gallon capacity (12).
Jaw crusher, 9x14 Gates.	3600 gallon capacity (15).
Locomotives, 9x16 Baldwin 36 in. gauge, (2).	3800 gallon capacity (2).

We have large machine shops, and every engine, boiler and machine is thoroughly overhauled and tested before leaving our plant. In addition we have structural iron, pipe, shafting, pulleys, corrugated roofing, steel and metal ceiling and siding, lumber, mill work, complete plumbing outfits for factories and public buildings, office and parlor furniture. Send for new 500 page catalog No. 889. Free on request.

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SECOND-HAND MACHINERY.

FOR SALE BY

Wm. E. Gang Co., 1543-1547 Queen City Ave., Cincinnati, Ohio.

Engine, boiler and pump, second-hand.

Engine and boiler, including one 9x16 Lane & Bodley engine, left hand, self contained, band wheel 54x12, shaft 4 7-16x28, governor with automatic stop, throttle valve, s.-f. cylinder lubricator, etc.; one vertical submerged tubular boiler, 48x120, with base, grates, doors, etc.; coil of National type heaters, with piping fittings and valves, 3 in. B. P. valve, tee and plug; Laidlaw-Dunn-Gordon 3x2x3 duplex piston pump, brass fitted; complete, \$350.

Gear cutter, 30in. G. & E. regular type automatic, for light and medium classes of work, with automatic oil pump, sub-base, 4 step cone, complete set of change gears, work and cutter arbors and centers; excellent condition, \$450.

Radial drill, 2½ ft. W. E. G. Co., with plain box table and speed box, later design than our regular machine; used in our shop; good condition, \$375.

Radial drill, 2½ ft. W. E. G. Co., with plain box table and speed box. This machine is of our latest design, and used only for testing, \$450.

Radial drill, 3½ ft. W. E. G. Co., with plain square table, cone driven, complete with c. s.; used only in our shop and thoroughly overhauled, \$450.

Turret lathe, 18½ in. Dresos & Mueller, with power feed, friction back gears, oil pan, pump and piping, cut-off rest, longitudinal feed, 2 9-16 in. hole thru spindle, 3 step cone for 3½ in. belt, 2 friction pulleys on c. s.; good cond., \$325.

Second-Hand Wood-Working Machinery.

A very complete list of second-hand wood-working machinery of all kinds will be found in the current issue of The Machinery List, a copy of which will be mailed free by the publisher on request. Address **A. H. Hitchcock, 1220-1235 Caxton Bldg., Chicago.**

THE LODGE & SHIPLEY MACHINE TOOL CO.

Offers at a bargain the following tools, some of which are NOW IN USE in its own shops:

LATHES.

One 24 in. x 8 ft., 5 step cone head, quick change gear Lodge & Shipley lathe with turret on carriage.

One 30 in. x 18 ft., 5 step cone head, quick change gear Lodge & Shipley engine lathe.

Two 3½ in. x 60 in. Fitchburg Machine Works Lo-swing lathes.

One No. 3 Lodge & Shipley Rapid Reduction lathe with 8 ft. bed.

TURRET CHUCKING LATHE.

One 30 in. x 8 ft., 4 step cone head, power feed to turret, Lodge & Shipley.

PLANERS.

One 36x36 in. x 10 ft., 3 head, William Sellers Co.

One 36x36 in. x 26 ft., 4 head, William Sellers Co.

One 42x42 in. x 20 ft., single head, Putnam Machine Tool Co.

**The Lodge & Shipley Machine Tool Co.
CINCINNATI, OHIO, U. S. A.**



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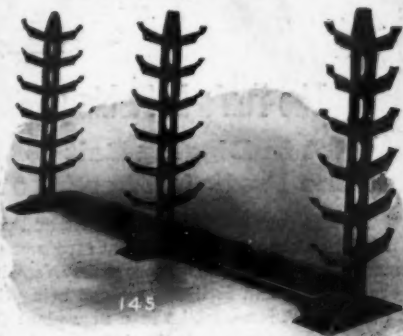
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